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NOTES ON
GERMAN SCHOOLS

GERMAN HIGHER SCHOOLS

The History, Organisation and Methods
of Secondary Education in Germany

By JAMES E. RUSSELL, Ph.D.

Crown 8vo, 7s. 6d.

**THE TEACHING OF MATHE-
MATICS IN THE HIGHER
SCHOOLS OF PRUSSIA**

By J. W. A. YOUNG, Ph.D.

Assistant Professor of the Pedagogy of Mathe-
matics in the University of Chicago

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LONDON, NEW YORK, AND BOMBAY

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With Special Relation to Curriculum
and Methods of Teaching

BY

WILLIAM H. WINCH, M.A.

LATE SCHOLAR OF ST. JOHN'S COLLEGE, CAMBRIDGE
INSPECTOR OF SCHOOLS

AUTHOR OF "PROBLEMS IN EDUCATION"

"Popular Education is a subject which can no more be known without being treated comparatively, than Anatomy can be known without being treated comparatively."—MATTHEW ARNOLD.

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This Book
is inscribed to
My Wife

whose continuous help has made its
publication possible.

To the British Foreign Office, the Representatives
of His Majesty in Germany, the Ministerium
at Berlin, and German School Superintendents,
Inspectors, and Teachers, my warmest thanks
are due for facilities granted, and much valuable
assistance generously given.

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PART I

NOTES ON GERMAN SCHOOLS

CHAPTER I

INTRODUCTION

IN the *Journal of Education*¹ the following paragraph occurs :—

“Dr. J. M. Rice, the editor of the *Forum*, has been giving specimens of the work that is to be undertaken by the Bureau of Educational Research recently organised under his guidance and direction. The object of the Society is to discover what a pupil's average knowledge and ability should be at different stages of school life, according to the time he has devoted to those subjects, and in this way to gauge the relative worth of schools and teachers. The difference revealed in the schools of six different cities by tests in arithmetic applied by Dr. Rice is astonishing. Thus in Standard IV. the highest average of city 6 is below the lowest average of city 1.”

I quote this paragraph because it indicates that, to some extent, America recognises the need for comparative work with definite tests if real educational progress is to be made, and because I have attempted

¹ July 1903.

to apply a definite system of measurement and test to some of the subjects taught in German schools. It is of little use to pile up work in educational exhibitions, or to show samples of great excellence, unless we know the conditions of their production, the age of the pupils, their length of school attendance, the regularity of that attendance, the number in class, and the time devoted to the particular subject of instruction. In fact, much of the excellent work thus shown inspires in experienced teachers very grave doubts as to the fairness of its production. It is not difficult to get such work done if other subjects and other pupils are comparatively neglected; and there is a direct temptation to this neglect if schools are to be estimated by the special work in special subjects of a few picked scholars. I am not arguing for the abolition of Exhibitions, far from it; I am pleading only that they should be scientific in the best sense of that much-abused word. Moreover, even opinions formed by the inspection of work done under normal conditions may be very misleading, unless these impressions are carefully checked by actual tests.

This book is not a treatise on German education as a whole. Not months, but years of patient inquiry would be necessary to undertake such a task. I rather hoped by confining my work within narrower limits to accomplish something of more permanent value.

I had endeavoured, before visiting the country, to prepare myself by a careful perusal of all available reports on German education, and as many of the official syllabuses of work as I could obtain.

My attention was mainly confined to the primary, middle, and that section of secondary schools in which modern languages and science take a prominent place. Such a limitation is strictly necessary if one is to avoid generalising from particular instances, which an endeavour to cover the whole field of German education in a month or two would certainly involve. How often, for example, one reads an account of the teaching of foreign languages in Germany, which leads us to think that grammatical teaching is dead, that exercise writing is abolished, that no translation is permitted, and that oral instruction by the direct method is the only one in favour with the best teachers. The detailed lessons which I give form a needful corrective to such notions; they could, I think, only arise from a very limited experience dealing exclusively with a particular type of teaching.

The schools which I visited were chosen for me by the *Schulrat* (Superintendent) in each town, my only conditions being that the schools selected should comprise some in poor surroundings, some in average surroundings, and some of the most fortunately circumstanced; and, further, that they should be good schools, rather in the sense of instruction and training than in excellence of building.

It is, perhaps, particularly opportune just now to give some data for comparison between the German educational system and our own, as a very considerable approximation to the former is likely to result under the new Education Act for England. Municipalities are to take a much larger share in educa-

tional direction than before, and, as in Germany, the body directly concerned with education is to be a committee, not directly elected for that purpose, and containing expert members. No view of education which neglects the method of administration can have much practical value ; so that we may learn both the advantages and disadvantages which accrue when such a system is, and has been for some time, in full working order.

The German educational authorities are more inclined than our own to believe that the scientific problems, psychological and other, upon which educational practice is based, are matters for specialistic knowledge and scientific research. We are prone to decide such questions, not indeed without thought and inquiry, nor without the aid of expert knowledge ; but we too often imagine that methods of teaching and the psychological knowledge on which they are based can be sufficiently determined by information gained from teachers and inspectors, most of whom are too busy with actual administration, even if they possess the necessary scientific equipment, to give an undivided attention to these extremely difficult questions. At Breslau, for example, the educational authorities recently commissioned Professor Ebbinghaus, a distinguished German psychologist, to investigate the nature and extent of nervous fatigue in their schools. And this action is only an indication of the general feeling in Germany against an empirical method of dealing with such problems.

In my opinion the characteristic feature of this book is the reproduction, in outline, of actual lessons heard

by me. It is not usual in scientific research to attach much importance to conclusions arrived at when the evidence on which they are founded is not given. It is hardly necessary to indicate how much of educational theory to-day is opinion, open to no verification. We have, it is true, very little in the way of recognised units in educational research, and until definite experimental methods are adopted, there is little hope for a science of pedagogy. But one can, at least, attempt as much definiteness as circumstances render possible, and refrain from mere impressionism. Moreover, one can furnish much of the evidence on which one's own conclusions are based, so that the value of the work does not merely depend upon those conclusions. These considerations induced me to give notes of the lessons in detail. But even then, every psychologist knows how very misleading oral class answering may be, and how easily even written results may be misinterpreted. I have endeavoured to present what is typical, but I have not rejected, rather have I welcomed, examples and illustrations which were in conflict with preconceived views, whether they were my own or those of others.

I need hardly lay stress on the age of the pupils, the number in the class, and the time given to the subject, as vital factors in our judgment of a lesson. Indeed, I look forward to a time when no educational authority will attempt to discuss any question of school curriculum without calling for these facts as a necessary preliminary. And if neglect of these matters prevents us from reaching correct conclusions as to our own work at home, it is fatal where an attempt

is made to compare our work with that of foreign countries.

To take two instances. First, as to foreign languages in secondary schools. No doubt exists as to German superiority. But have we ever given our own pupils an equal chance? Compare the time given to the subject in our country and in Germany. Or again, take the teaching of Drawing, which the Germans are now modifying along English lines. The Drawing Exhibits of the large School Boards in England show work of much more advanced character and of better execution than is to be found in German schools. This many German teachers admit, but point to the fact that some of our pupils occupy about a fifth or sixth of their whole school week in drawing, and this, they say, and I heartily agree, is a price too big to pay.

There is a further advantage in the method which I have adopted of basing my conclusions on what is actually done rather than on what is supposed to be done, and what, from the point of view of the authorities and their syllabuses and regulations, ought to be done. And that advantage is that we are dealing, so far as my own rendering does not pervert them, with "facts." For example; children in Germany begin to attend school at six, and move upwards mostly one class a year until they leave at fourteen. Thus the fifth class from the top is the third school year, and, on the assumption that the children all began at six and went steadily forward, the age would be eight in this class. And the teachers, when asked for the ages, naturally enough give what I may call

the official age. A closer inquiry, however, and a tabulation of the actual ages, modify one's judgment. In the lessons given, where I did not take the actual ages, I have described the age given as "official age." If education ever becomes a science, official regulations, though extremely valuable no doubt, will only be auxiliary to investigations conducted under the proper conditions of true experiment. It would frequently be true to say, the more formidable the syllabus, the less the work ; so that syllabuses may not only be false, but misleading.

Further, all political and administrative arrangements are only machinery to an end ; the teaching after all is the tool-end of the machine ; and it is on modes of teaching and learning that the efficiency of the whole depends. I have endeavoured, therefore, to make my investigations useful to those who are actually doing the work, as well as to those engaged in educational administration.

In giving these notes of the actual lessons heard I wish to disavow, once for all, any notion that may arise that these are given as examples to be copied. Many of them doubtless might well be copied with advantage ; but my object was neither to provide models for imitation nor examples to be avoided, but simply to give actual evidence as far as I was able, in addition to my own opinions and conclusions.

I am, I trust, at least partially aware of the imperfect nature of such an investigation as this. It certainly falls very far short of what I, myself, regard as indispensable conditions to any successful inquiry in matters susceptible of scientific method. I have

endeavoured to check my impressions by constant appeals to actual tests, but much that is advanced necessarily lacks such verification. For example, racial difference has been suggested as one cause of the German superiority in foreign languages, but no one could be more fully conscious than I am that the necessary experiments to establish such a conclusion have not been undertaken.

Educational ideals are not primarily determined by educationists, and we cannot hope for unity here until the ideals of life are uniform; but the study of the facts of education can, meanwhile, proceed. In the hope that something, however small, may be thus contributed to the study of comparative education, the following pages were written.

I fear that I must have made many mistakes, sometimes serious ones, and wish to apologise in advance to my German friends for inaccuracies and misrepresentations. I do not apologise for criticism if founded upon knowledge, and based upon understanding. I have reason to know that, in some quarters at least, criticism would be welcomed. But I do regret the almost inevitable mistakes, which I shall be most willing to correct, if any subsequent opportunity presents itself.

CHAPTER II

GRADES OF SCHOOLS AND SCHOOL FEES

School Authorities

IN Germany there are no directly elected School Boards. To take a typical example, the school committee of Frankfort consists of—

- (a) Three members of the "Magistracy" chosen by the "Magistracy" itself.
- (b) Three members of the Municipal Council or Parliament of the town.
- (c) A member of the Clergy for each of the two Christian denominations, Protestant and Roman Catholic.
- (d) The School-superintendent (*Schulrat*).

The "Magistracy" is an official body consisting of the Superintendents of the various departments of municipal activity, *e.g.* electric supply, water supply, &c.

The President of the School Committee is the Mayor of the town. He can, however, be represented by a member of the "Magistracy."

The decisions of the School Committee require the sanction of the Municipal Council, and these again require the approval of the Education Department of the Administrative province in which the town is situated.

Schools and Fees

There are no municipal infant schools. There are, however, private kindergarten schools which are not largely attended; and they are not correlated with the municipal system.

The compulsory school age is from six to fourteen, and the schools may be divided into (a) Primary, (b) Secondary. In some towns the primary schools consist of higher grade or middle schools and lower grade or ordinary schools. In others there are no higher grade schools apart from the secondary school system.

The secondary schools are divided into modern schools (*Realschulen*), classical schools (*Gymnasien*), and combinations of the two (*Realgymnasien*).

The school fees vary from town to town.

In the Prussian town of Frankfort some of the schools in the poorest neighbourhoods are free, but reading books, copy books, &c., are not gratuitous, though in one large school, attended by 800 girls, 600 marks were allowed annually by the School Authority for their purchase, and a grant of 8000 marks was received annually from a Benevolent Society (*Armenverein*).

The children in the middle or higher primary schools pay a fairly considerable fee.

Almost all the pupils leave at fourteen. The greater zeal for the education of their children, which German parents manifest, is apparent rather in the much larger proportion of scholars attending the secondary schools than in their retention beyond the

compulsory age in primary schools ; but the proportion of secondary school children from primary schools is very small indeed, except in Berlin ; and in Berlin the explanation of the larger numbers lies in the fact that there are no preparatory schools attached to the secondary schools. This is a concession to democratic feeling, and the municipality suffers loss by this, since, in Berlin, the primary schools are free, whereas the secondary preparatory pupil pays. The scholars who subsequently attend the secondary school in Berlin will have received their early education either in the primary public schools, or in private schools. They enter the secondary school at ten, eleven, or twelve years of age, and usually pay 80 marks per annum. There are free places in the secondary school, probably about 10 per cent. of the total number. Application must be made and comparative poverty established. There is no competitive examination, and more than one teacher laid stress on the importance of having "good connections" if success were to be attained. The practical difficulty of selection by the method adopted seemed to me very great. There seems no adequate provision for the poor clever boy to pass from one school to another of a higher kind. There are also free places in Frankfort to middle schools, not to higher schools, and it is open to parents or guardians to make application for them. But I have gathered from teachers that the application must usually present special features as to poverty, and moreover, seems to depend for its success on the report of the head teacher as to the pupil's work. Injustice here is inevitable, since a diversity of standard

must exist among head teachers. I explained the system of scholarships by examination prevalent among us, and especially the attempt to gather clever children from surrounding schools into higher grade schools by competitive examination. I was informed that German teachers would not like that system, and, on inquiry, was told "the teachers would oppose anything which took away their best scholars."

A further defect in our system was pointed out. "The children being chosen from so many schools will not, when collected into one building, be a school in any true sense of the word," said my German interlocutor. When, however, I explained that the school as a whole remained undisturbed, and endeavoured to absorb scholars from other schools into its vacant places, his objection ceased to apply. It is interesting to notice that the *Lehrplan* (Common Syllabus of Instruction) is not a sufficient guarantee of uniformity of standard in different schools.

In Frankfort there has been for some time a party in favour of common schools for all, supported by teachers who hope thereby, their opponents say, to raise their own social status. But, for the present, the arguments against such a course are more generally accepted, namely:—

1. To markedly contrast wealth and poverty, side by side, is inadvisable.

2. Superior home opportunities give wealthy children undue predominance.

3. The language difficulty, which exists with the poorer classes, and does not with the upper classes, would make classification difficult.

4. Private schools, which, though inspected, are not as efficient as the secondary preparatory schools, would unduly multiply.

I have called those schools, which, while belonging to the elementary system, are yet attended by pupils who pay a high fee and are situated in good neighbourhoods, higher primary or higher elementary.

Such schools existed in some numbers in Frankfort and Leipsic, and were strikingly different from our higher elementary schools. For the curriculum was practically identical with that of other elementary schools except for the addition of a foreign language. This, however, really implies a considerable addition to the curriculum, for four or five hours must be given to the subject weekly.

There is no attempt in Germany, as in our country, to turn the higher elementary schools into elementary science schools.

School children in the elementary schools of Leipsic pay 36 marks a year in *Bürgerschulen* (Burgher-schools), 18 marks a year in *Bezirksschulen* (District-schools), and 4 marks 50 in *Volkschulen* (Folk-schools). A reduction is made when several pupils attend from the same family, and some, who can show poverty, are excused.

In one higher elementary or middle school that I saw there were three sections of the first class. In one section the children entered at Easter from several neighbouring elementary schools where they paid half as much (18 marks as against 36 marks). It was, the teacher said, a very difficult class, since the children were very variously prepared, and they

would not have cared to come if they had been put in other than the first class. This was another indication that the *Lehrplan* is not effective in producing a uniform standard for the same class in different schools.

In the first class of a suburban secondary modern school near Hamburg, five pupils, men about twenty, came from the primary schools (*Volkschulen*). Only one of these had a free place, and this school was fairly typical. The fees amounted to 144 marks (£7, 4s.) a year, and seemed considerable for boys who had previously attended the primary schools.

The great difficulty in the secondary schools is that arising from the passage into these from other schools of pupils at very diverse stages of competency. The syllabuses of the primary schools are practically identical; but, as there is no external standard of proficiency, the actual work varies very much from school to school; nor does there seem any method by which pupils, unsuitable for secondary education, are excluded.

CHAPTER III

SCHOOL HOURS AND HOLIDAYS

THE school hours differ somewhat from town to town. But there is always a long morning session, and, in some cases, there are two-hour sessions in the afternoon. In one town the schools were open from 7 A.M. to 12 noon every morning, including Saturday, and from 3 P.M. to 5 P.M. on Tuesday and Friday.

It should be understood, however, that only the boys in the highest classes come at 7 in the morning, other classes coming at 8 o'clock, and still younger classes at 9. Our own system, which requires the same school hours from all children in senior departments, strikes the German as most unreasonable, and as allowing nothing for the greater capacity for sustained intellectual work which the older pupils possess. Equally unreasonable, and for the same reason, are the rigid "hour-long" lessons which the German gives throughout, or nearly throughout, all his classes, irrespective of age. Probably we ought each to change; we, to make school hours of attendance proportionate to age and capacity; the Germans, to make their length of lesson proportionate likewise.

In Frankfort a larger proportion of the total school time is given in afternoon sessions; and, so far as I was able to make out, the tendency was rather towards,

than away from, the English distribution of school hours in primary schools. But, in all the German towns I visited, the morning session began at an hour which, to us, would seem unreasonably early.

Generally speaking, the holidays for primary schools were longer than our own. They were divided into four periods, one at Christmas, one at Easter, one in the summer, and one at Michaelmas, amounting to a total of nine or ten weeks in the year.

The holidays in the secondary schools approximated to those in the primary schools, and were distinctly less than in our own country.

There are few occasional holidays, except, perhaps, for hot weather.

In Leipsic, when the thermometer at 10 A.M. registers more than 25° Centigrade, the afternoon is a holiday. This occurred once only during my visit, which coincided with one of the few periods of hot weather in the summer of 1902.

If a calculation were made as to the total school hours per year, the German schools are in excess of our own, so far at least as the older scholars are concerned.

CHAPTER IV

SCHOOL BUILDINGS

As in our own country, considerable diversity exists between schools built at earlier and later periods. The general design, however, differs rather markedly from ours. The large central hall, with class-rooms opening out from it, is not a German construction. But the class-room system is invariable, and the rooms, which are separated by walls and not by partitions, are arranged along wide corridors. Every school has a large hall for drill and gymnastics situated in its playground; and in some schools a second hall is to be found within the building, and is usually situated so that what transpires therein neither affects, nor is affected by, the work in the class-rooms.

Generally speaking, the German town schools are larger than ours; the girls and boys are in separate buildings, sometimes side by side. The rooms are rather low and not well ventilated, especially where double windows are used in schools facing streets with traffic. The pupils' desks are not raised on tiers as in London, and there are often seven, eight, and nine or more rows from front to back.

In Leipzig the secondary schools have a large hall (*Prüfungs Saal*) with an organ built in, apart from the class-rooms, and in addition to the gymnastic hall.

This is true also of many schools in Berlin. Pictures were almost invariably absent, but a few busts on brackets adorned the walls,—Luther, Melancthon, Kaiser Wilhelm, and the King of Saxony were to be seen in one of these halls, which was lofty, handsome, and quiet.

As a rule the bareness of German class-room walls strikes an English observer very unfavourably. The maps are rolled up and carefully stored, the pictures are in trays and cases, and are taken out when needed.

The decorative aspect of pictures is not attended to at all; and when an Englishman mentions the array of pictures on the walls of his primary schools, the German answers: "You know you are so rich," and sometimes cleverly presses the point that what children are always seeing they take no notice of. I saw, however, in Leipsic, one or two very light blackboards with good outline maps of Germany on them, which were, as was the case with a few other maps, suspended on nails knocked into the wall; but this was rare.

A Hamburg higher modern school contained a beautiful hall with an organ (the room was remarkable for the absence of tawdry ornaments and pictures), a room for drawing, a hall for singing, a library, a map room, a museum room, and two small chemical and physical laboratories.

All new schools in Berlin now have a physics room, but this means really a stepped room (stepping not being the rule as with us), with a demonstration table of a not very elaborate kind.

The secondary modern schools, the *Realschulen*,

contain extremely full sets of specimens and apparatus for the teaching of chemistry, physics, and biology. I thought much of it quite needlessly elaborate, and the range of subjects far too wide. But this really opens up the whole question of science-teaching, its aims and possibilities, and I must be content here to give the fact and suggest, rather than elaborate, a criticism.

In a higher modern school which I saw at Hamburg, there were small chemical and physical laboratories, and practical work was done by the boys. But such laboratories were not general, and the point requires special emphasis. For the scientific education in Germany, which is so much praised in comparison with our own, is not obtained in either the primary or secondary schools, but in technical colleges which receive pupils after they have successfully obtained a good general education. If we compare this for a moment with the one-sided development of our own higher elementary schools, in which boys whose general education is hardly begun are expected to work mainly at science from the age of eleven or twelve to fifteen, and with the preponderant science grant to secondary schools whether under the A or B scheme, we see at once the broad distinction. We specialise in science in place of other necessary elements of a general education. The Germans specialise in science after a good general education has been secured.

In Berlin the secondary modern schools contain a science room. This is really a demonstration room with long narrow table and galleried seats.

There were laboratories in the *Realgymnasien* and in the *Oberrealschulen*, but not for the pupils. I was particularly desirous of finding out what were the reasons against laboratories for pupils which really weighed with the teachers. I incline to think that a change of opinion is in progress on this matter. I certainly did not hear much argument against the principle of practical work, at least for secondary science schools such as the *Realschulen* are supposed to be, but the teachers seemed quite sure that it took much time, was a slow way of teaching science, and that their curriculum was already too heavy. With these arguments I cordially agree ; but even a German curriculum is modifiable, and I think that a much more moderate syllabus attempted practically may become a leading conception in German pedagogy in the not very distant future. On the other hand, though our own practical science rooms have developed a certain knowledge of, and dexterity in, experiment, there is, at present, very little appreciation amongst our pupils of the purpose of the experiments, and very little power of correctly stating the conclusions derived from them.

In one new suburban primary school in Hamburg I was specially struck by the splendid collection of apparatus for the teaching of—

- a. Magnetism.
- b. Electricity.
- c. Mechanics.
- d. Physiology.
- e. Chemistry.

There were, among other things, beautiful cases of bees, and expensive preparations of musk-rat and

tape-worm. The head teacher, proud as he well might be of the enthusiasm for education which prompted Hamburg to supply such a collection, enlarged on the prices of the articles. I was not, however, satisfied as to their utility, and when I put the question, "Can the children really learn anything about all these things?" I was fairly satisfied that the head teacher's opinion of their value educationally was not far removed from my own.

In the playground of this school was a space of some twenty yards by six yards marked off as a school garden. The school-keeper tended this, and it was of decided value to enable the children, who wished, to see certain plants growing; but these could not of course be grown in such quantity as to permit specimens of the same plant to be given out all round the class. Arrangements for this had to be made by the teachers themselves. It is noteworthy that the upper class in this school gave three hours a week to science.

The school playground was strewn with dirty sand.

The only hall here was the *Turnhalle* (drill hall). There was neither an assembly nor examination hall. Each school contains a library for teachers, including a large number of works on method. One book on general geographical method, written on Herbartian lines, contained a chapter which was headed, "Why England is known as (*genannt*) the first country in the world." I said to the Rector, "You follow Herbart?" "Yes, to some extent." "You do not follow Fröbel?" "*Nein; er ist ein kleinkinder Lehrer*," was the answer, ("No; he is a teacher for the little ones").

CHAPTER V

THE TEACHERS, THEIR TRAINING, AND SALARIES

Training and Salaries

1. *Prussia*.—Probably from 70 per cent. to 80 per cent. of the teachers in elementary schools were originally scholars in primary schools. At the age of fourteen boys may sit for an examination, success in which gives entry to a “preparation school” attached to a training college. At the age of seventeen there is an entrance examination to training colleges. The examination embraces the subjects of instruction in primary schools. Candidates from secondary schools are said to find themselves badly equipped in religion, music, and gymnastics. The standard maintained in this examination is not now very high, I am informed, since the training colleges are not full, and teachers are wanted in Prussia.

The training college course lasts three years, at the end of which there is a leaving examination. The certificate granted specifies the standard of attainment in each subject separately.

The teacher is not yet eligible for a fixed appointment; he must pass a second examination, not less

than two years and not more than five, after leaving training college. The examination embraces all the subjects of instruction in the primary school, with special reference to their pedagogical side. This is only one more instance of the great care and attention given to methods of teaching, especially when we remember that not less than six hours a week have been given to teaching during the last year of the training college course.

The teacher, who has probably, hitherto, been teaching in the country for about £50 per annum, is, if successful, eligible for permanent appointment in a large town. The Municipality which employs him cannot now dismiss him without the sanction of the *Ministerium* (Board of Education).

Compulsory examinations are thenceforward at an end, but there are two more which are optional. One, which embraces two branches of knowledge only, with the related pedagogy, is a four days' examination, success in which entitles the teacher to teach in a middle school (higher primary). A further two days' examination in the theory and practice of teaching, together with a thesis on a subject chosen by the school superintendent, permits the successful candidates to apply for positions as head teachers. The appointments to these positions seem to depend generally upon the favourable reports of inspectors and superintendents, and the interest attainable by the teacher among the members of the *Schul-Deputation* (Education Committee). There is danger here that great practical ability may lag behind in the lower posts. I saw several excellent teachers who, I was informed,

would never become rectors, for, it was said, "they cannot pass the examinations."

The rectors or head teachers of the primary schools in Berlin receive 2400 marks a year and "free dwelling," together with an increment which, after thirty-one years' service, amounts to 2400 marks annually. This approximates as a total to £300 a year.

The men teachers are on the following scale :—

					Marks.	Marks.
From	1st	to	4th	year of service	960	+ 432
"	4th	"	7th	"	1200	+ 648 Marks.
"	7th	"	9th	"	1200	+ 648 + 300
"	9th	"	11th	"	1200	+ 648 + 500
"	11th	"	14th	"	1200	+ 648 + 800
"	14th	"	17th	"	1200	+ 648 + 1000
"	17th	"	20th	"	1200	+ 648 + 1300
"	20th	"	23rd	"	1200	+ 648 + 1700
"	23rd	"	26th	"	1200	+ 648 + 2000
"	26th	"	29th	"	1200	+ 648 + 2200
"	29th	"	31st	"	1200	+ 648 + 2400

A teacher commencing service obtains approximately £70 per annum, and, at about fifty years of age, a competent teacher will receive approximately £212 per annum.

The most marked difference between this scale and that, say, of London, is the relatively high pay of the experienced assistant teacher, and the relatively low salary of the head teacher. The low initial salary of the male assistant is in contrast to the recent movement in England, where, almost invariably, initial

salaries have been going up. When the very large size of the schools in Berlin, the great responsibility of the head teacher, and the actual teaching which he has to do, are duly considered, it would certainly seem that, from an English point of view, the head teacher is insufficiently paid.

2. *Saxony*.—In Saxony there are twenty-two training colleges for men and three for women.

Each college has attached to it a preparation school and a practising school. The intending teacher enters the preparation school at the age of fourteen by means of examination, and, after three years' successful work, passes into the training college proper. Here a much larger proportion of time than with us is spent in the giving of lessons and the taking of classes. The studies are especially directed with a view to the subjects which must be taught in all primary schools.

A leaving examination at the end of the third year permits the trained teacher to become an assistant on probation. Not more than three years later he must pass another examination, which is largely pedagogical. On the results of this he receives a certificate, which may be of either of the following classes and divisions :—

1, 1*b*, 2*a*, 2, 2*b*, 3*a*, 3, 3*b*, 4, 5.

Out of about 500 students examined annually, about fifty or sixty are awarded Class 1 or Class 1*b*, with permission to attend the university.

The first class gives permission to attend the

university, whilst Class 1*b* does so only with the special permission of the *Ministerium*.

In Leipsic no teachers lower than Class 2 are engaged, and the teacher enters upon his duties about the age of twenty-three.

The following table shows the approximate age of the teacher and the annual salary in marks :—

Age.	Marks.	Approximately.	Age.	Marks.	Approximately.
23	1500	£75	33	2600	
24	1500		34	2800	
25	1800		36	3000	
26	1900		38	3200	
27	2000		41	3400	
28	2100		44	3600	
29	2200		47	3800	
30	2300		50	4000	
31	2400		53	4200	£210
32	2500				

There is some reason to believe that the purchasing power of money is greater than in England, though Germany is experiencing the usual concomitant of industrial progress, a rise in prices. The marked differences between these salaries and those of England in large towns are the lower minimum and the much higher maximum.

There are 1500 teachers in Leipsic, engaged in fifty schools, each of which has a director, who also teaches regularly a number of hours per week, ranging from eight to twelve, according to the size of his school. The schools, from our point of view, are enormous; "650," said one master, is "*eine kleine*

Schule"; and, though the wisdom of the Board of Education may very well be doubted in the recent restrictions as to size which it has laid down, there can be no question as to the inadvisability of such large schools as these; and, in fact, I have not consulted any German director who did not think his school too large.

In Saxony there are no subsequent examinations which a teacher must pass in order to teach in middle schools or obtain head teacherships, as there are in Prussia.

In Saxony, as well as in Prussia, all primary teachers have been to the *Seminar* (training college), and, in addition, some have also attended the university, a privilege which the Prussian teacher is now asking for. Very rarely is a training college teacher employed in a *Gymnasium* (classical high school), but much more often in a *Realschule* (modern high school), where he generally takes the lower classes and makes a beginning in new subjects. Here method is relatively more important and knowledge less so.

The teachers of the higher schools, *Gymnasien* and *Realschulen*, are not trained to teach in the same sense as the training college teacher, if they can be said to be trained at all. At the university they are required for the higher teacher's certificate (*Oberlehrer*) to attend lectures on the history of pedagogy, and the general rules of pedagogical method.

Some specimen lessons are given, and meetings for criticism are held. The weak point in the system is that no continuous teaching experience is provided.

For the first year (probation year) the teacher is

attached to a school or schools to observe, and help in marking papers, &c. He does not teach, and receives no pay. In the next year he takes classes of absent teachers, and receives a very small stipend, calculated on the hours of teaching done. Private coaching, mostly of backward children, is an additional source of income. At the commencement of the third year he is eligible for permanent employment. The class teachers of the *Gymnasien* may rise to 6400 marks annually; the directors to 8000 marks.

Some teachers, after they have won their spurs as teachers, are given leave to go abroad for some months to acquire linguistic facility. Leipsic continues their salary, but deducts "supply" teacher's pay; the teachers assert that not much remains for them.

Our system of employing Frenchmen to teach French excites a feeling which is as near derision as a courteous German will permit himself. At any rate, I am quite in accord with the general mass of expert evidence that rates German language teaching as very seriously superior to our own. And this superiority is probably, at least partly, due to the facilities thus provided, to good teachers only, and at a suitable age, to continue their training in language abroad.

3. *Hamburg*.—The State requires university men who intend to teach in secondary schools to pass the higher teacher's examination. The examinee takes his subjects in groups, but is required to show proficiency in more than one group. No actual training in teaching is given before this examination is attempted, but the candidate must attend lectures on pedagogy.

Having obtained the higher teacher's certificate, the secondary teacher commences his training in teaching. For one year he visits schools and observes methods. The schools are selected for him, and he receives no pay. For another year he is attached to a definite school or schools, and is permitted to do "supply" work in those schools during the absence of the regular teachers, and is paid on a time basis for work actually done. He is then eligible for permanent employment. In Hamburg his salary commences at 3600 marks, and rises by 600 marks every three years.

There are no special examinations for rectorships ; all qualified higher teachers are eligible. Many teachers, however, take the doctor of philosophy examination. An essay is required showing originality, and an oral examination in three subjects must be passed.

As in the case of the primary teachers, the difference between English and German scales of salary is not so marked at the commencement as at the higher limits of the scale.

The chances of promotion are rather less in Germany on account of the great size of the schools and the consequent smaller number of headships ; but, even when this is allowed for, the inequality in payment remains glaring enough. It has hardly dawned upon us yet, that it may be worth while to make teaching a desirable profession for worthy men to devote their whole lives to, even though promotion be denied them.

Hours of Teaching

1. *Head Teachers*.—The head teachers, rectors, or directors, as they are variously called, are always men, and their duties consist, not only of supervision, examination, and general arrangement, but also of regular teaching. These lessons duly appear on the time-table, varying in number according to the size of the school; and the organisation of the school renders them automatic and compulsory.

In one school in Frankfort the head teacher gave twelve lessons a week, in another fourteen.

In a school in Leipsic the head teacher was expected to control twenty-seven classes, boys and girls, as well as fourteen classes in the school for defective children, which was attached. In another school of the same town there were thirty-six classes (seventeen boys' and nineteen girls') and 1500 children. There was one director only, and he was required to give four lessons a week.

In a school in Berlin there were twenty-three classes of boys in the ordinary school and three classes of defective children, and these were all under the same head teacher. Both in a *Realschule* and in a primary school of this town the rectors gave twelve lessons a week.

In one suburban school near Hamburg the head master was required to give twelve hours' instruction a week, and in another, as there were eighteen classes, he was not required to teach for more than nine hours a week.

It may be mentioned here that the head teachers

are only liable to interruption by parents during certain specified hours, about an hour each day, at which times they are always to be found in "The Director's Room."

2. *Assistant Teachers*.—The "assistant teachers" as we should call them, or "teachers" as the German calls them, are engaged in actual teaching for a varying number of hours per week, depending upon their age, sex, and class.

For instance, the Leipzig teacher is expected to teach thirty hours a week at first, unless he take the higher classes (rare with young teachers), in which case the hours are twenty-eight. When past middle life, however, his hours of teaching are somewhat reduced; at the age of fifty-five, for example, he teaches eighteen hours a week.

In Berlin primary schools the men teachers are expected to teach twenty-eight hours a week, and the women teachers twenty-four hours a week.

School Staff

The head teachers of both boys' and girls' schools are men; the assistant staff in primary and middle schools are adult teachers who have almost invariably passed through a training college. A few university men who have not received a training college education may, however, be found here and there. In secondary modern schools the great bulk of the teachers are university men who have not passed through a training college.

In a *Realschule* of Berlin that I visited all the

teachers, of whom there were about twenty, were university men, except the teachers of gymnastics, singing, drawing, and writing, and two teachers who were training college teachers. These were not the form masters for the lower classes, as I expected, for one of them taught all the mathematics for the third class (ages thirteen and fourteen), and for the two sections of the fourth class (ages twelve and thirteen); and the other taught arithmetic and botany.

In one higher modern school of Hamburg there were teachers at the lower classes who had been trained to teach in the training colleges, but the great majority were university men, and I was informed that this was typical.

In another there were six training college teachers, and the rector thought them better teachers than his university men.

So far as I am able to summarise the evidence of the head masters whom I questioned on the relative capacity of the two, I should say that, where much knowledge was required, as in the higher forms, the university man was preferred; but there was also a consensus of opinion as to the greater teaching capacity of the training college teacher. Between the two classes of teacher there was some lack of harmony. One university man thought that the trained teacher was conceited about his pedagogical knowledge and the excellence of his discipline. One training college teacher thought that too much weight was placed by the university man on his specialistic knowledge and social superiority. "What can you learn of teaching," said one, "by simply attending university lectures in

pedagogy?" Probably each accuses the other with some justice; they are proud of their respective qualifications; but they work, at any rate, side by side in the same secondary schools to an extent unknown among us, and to an extent which the rigid separation of Classes A and B on our Teachers' Register will tend to hinder rather than to develop. Moreover, we have a growing number of primary teachers whose university qualifications leave little to be desired, so that, frequently, both knowledge and training are with them.

Whatever the ultimate outcome in England may be, in Germany it would very generally be admitted that, with younger boys, even in the secondary schools, where method is of more importance than specialised knowledge, the training college teacher is superior. But in this connection it must be remembered that the German training college does actually ensure a good knowledge of the ordinary subjects of school instruction. The Germans have never accepted the notion, which has some currency among our educationists, that the teacher who has studied, say, Latin and mathematics, can easily "get up" his history, English, and geography for school purposes. Our own reforming movements for the better training of teachers will probably make more effort to secure that our teachers shall know well what they have to teach rather than that they shall spend most of their time in learning those subjects which, in all probability, they will never be required to teach at all.¹

¹ In this connection should be read the Report on Training Colleges (Board of Education), by Mr. Scott Coward, 1899-1900, and again a report

Germany, so far as its primary teachers are concerned, has successfully reached the goal to which we seem only to be slowly tending.

Sex of the Teachers

Whereas, in the United States, the teacher is always referred to as "she," in England as "he" or "she," in Germany the very great preponderance of male teachers decides that the usual pronoun shall be "he." This preponderance is on the wane, particularly in some of the largest towns, as, for example, Berlin, where there are about 2000 women teachers to 3700 men. I did my best to get opinions from various directors as to the relative work of the men and women teachers. Teaching together, as they do, under the same head, and as part of the staff of the same school, though the schools are not mixed, it seemed that a comparative estimate was possible. Much of the evidence given me was conflicting, but there was some consensus of opinion. The industry, assiduity, and perseverance of the women teachers were highly praised. They were very often drawn from a higher social class than the men teachers, and their early education was superior. They were not strong enough, it was thought, to compete quite successfully with men in work which was so hard as teaching, nor were they such able teachers.

Unlike the men teachers, they require to pass no by the same inspector for 1901. The key-note of his reports is, "We need a fuller system of training, a lighter burden of purely academic learning."

second examination, and their teaching hours are less. They are expected to give at first twenty-four hour lessons a week, and later twenty-eight. Their pay is, throughout, below that of the men.

The effect of male teachers in girls' schools showed itself in a subtle difference in tone; though the general opinion was that the men teachers knew more, and could teach better. The older girls, one rector said, prefer men teachers. His explanation was that women were too "petty" (*kleinlich*).

CHAPTER VI

METHODS OF TEACHING

THERE is not, as a rule, much that can be called training as far as the secondary teachers are concerned, but the primary teacher is both highly and uniformly trained.

There are some very noticeable differences between the German and English primary teachers, which even the most superficial observation would detect.

Their first characteristic was a striking uniformity. It seemed largely a matter of indifference which training college the teacher had passed through, the method seemed substantially one throughout, and it was rare indeed to find a teacher who was not master of that method. In our own country it is not unusual to find, on the same staff, teachers whose methods are admirable and teachers who have no method at all deserving of the name; and there is great diversity of methods even among the good teachers.

So completely successful has the training been, that one could often, on seeing the subject of the lesson, forecast exactly what the course of the lesson would be. One method there is universal; it is certainly not Frœbellian, nor should I describe it as dominantly Herbartian. It is a method of minute analysis and

proceeds by "Question and Answer." No German primary teacher lectures. His information is under control, and is not a sequence of ideas which must be pumped out at any cost. Those delightful lessons which teach the inspector something, and float in detached sound-waves over the heads of the children, are not heard in German primary schools. The lessons which are given in this book will sufficiently illustrate this point, and will prove, I think, to all competent persons what a master of this oral method the German teacher is. In the graded exposition and sequential presentment of his subjects he would be difficult to equal. But there is a defect which arises out of the very thoroughness with which the method is applied. Questions are sometimes asked where there is no question about the matter. And answers are, often, merely the verbal transposition of the question. This may be an exercise in language, though not even for this purpose the most valuable, but it is not progress in knowledge. A French critic, M. Chabot à l'École Normale, Lyons, said: "*Je fus frappé de la stérilité d'une méthode où il y a échange de mots sans échange d'idées.*" This is epigrammatic and exaggerated, but is based upon a real defect. Of course one does not expect exchange of ideas in any true sense of the word exchange. The point rather is that the pupil merely gives a pretence of mental movement, by changing the expression of the teacher's question, and presenting the changed expression as an answer.

Then, admirable as most of these carefully articulated lessons are, more nearly approaching the

finished beauty of a work of art than any lessons I remember to have heard, there is danger in their very excellence, if they are exclusively relied on.

It impressed Mr. Matthew Arnold most favourably that the children seemed active participators in the work, not merely listeners, and that now and again a child came out and worked on the black-board.

But it is not difficult in any class to find some pupils able to demonstrate on the blackboard; the question rather is, how many can, and how much can they do when the teacher no longer questions them?

I need hardly argue the matter in an abstract way; the examples given later in the book speak for themselves. Set the children a definite, continuous piece of work to do, each by himself, take away the teacher's questioning, which is really, of course, prompting, and the results of the work will show how much of it is actually the children's own. I am only emphasising what several of the German teachers, who are opposed to these methods, have said often enough. The power of the English schoolboy to work alone is still much greater than that of the German boy; but it is noteworthy that our own system has been approximating more and more to the German, during the last seven or eight years. When the knowledge and power of individual boys was tested by examination, no method had much chance of success, however showy it might be, unless children actually learnt and were able to do something. But a system of mere inspection directly

fosters a showy, attractive method which may have little result in improving the pupils' knowledge or capacity. The German primary system has been for years a system of inspection, qualified by very occasional examination, where it seemed to the inspector that examination was necessary. With the partially German method of supervision which we have adopted, it seems probable that the power of our children to work individually will also decline.

Another striking difference in method from that obtaining in England lies in the extent to which oral teaching is carried. We can still remember in English schools how much of the time used to be given up to repeating to the master lessons learnt at home. And even now all our secondary schools are not exempt from the charge that the principal work is homework, and the least important the actual teaching by the teacher in school.

But the English primary school, which, when annual examinations had to be met, preserved a fair balance between the oral teaching and the pupils' practice, has, since the advent of inspection without examination, tended more and more to approximate to the German schools in the amount of oral teaching.

It is not an exaggeration to say that the teaching in German schools is all oral teaching. Hour after hour, with short intervals between, the teacher teaches and the pupils listen, and answer his questions. It is not only that they are supposed to listen, they do actually succeed in doing it. Nor are these oral lessons the result of the advent of a visitor who wants to hear the

teaching. They are the normal and accepted method of instruction. A teacher in a middle school, who proposed to his boys one day that they should take out their books and work their French exercise in school, was met by the question, "What! here, Sir?" And, when I have suggested the great value which attaches to work done by the children under conditions of silence and without aid, I have been told more than once, "Yes, your English boys can do that; they can work by themselves: our boys cannot, they must be led and helped; if we were to let them alone, they would do nonsense. The difference is in your national character, it is not simply difference in school method."

But, however that may be, there seem to be indications which show how much self-help in school does depend on method; for the English primary schools, since it became no longer necessary for each child to meet his own individual examination test, have shown an increase in the amount of oral teaching and a decrease in the power of the average pupil to do things by himself. Yet when allowance is made even for this change, there is hardly any doubt that the English schoolboy, both primary and secondary, is much more intellectually independent and can work better without the perpetual prompting and questioning of the teacher. The detailed tests, which I was able to give here and there through the great kindness of the directors, will indicate exactly what I mean by the teacher's interference, and will show the difference which exists between oral answering to the teacher's questions

and the written individual answering of each pupil by himself.

I have been careful to speak of the schools only, for German university work certainly does not suffer from over-teaching.

This excess of oral teaching is not a discovery of my own, though, when I first saw the same pupils being talked to for three, four, or more consecutive hours, I could hardly believe that such a state of things was normal. There are German teachers who see and proclaim its evils, but they are, I think, a small minority.

It is to be hoped that we may ourselves neither copy from Germany in this matter, nor be induced by our own system of school supervision to practise excessive oral teaching. The traditions of the secondary school are, doubtless, a bulwark against it, but the primary school seems all too facile in its adoption.

The continuous oral teaching has bearing also on throat complaints among teachers. An official inquiry was held by the school-doctors of Leipsic a few years ago. Their opinion was that thirty hours a week should be a teacher's maximum, and when it is remembered that the work of the German teacher is almost entirely oral, we cannot regard this estimate as too low. The teachers are generally slow, low-pitched, and careful speakers; but, with all this, the huskiness and hardness which result from excessive use of the voice were often noticeable, even among teachers who said, on questioning, that their throats gave them no trouble. I

found in Frankfort also that many teachers suffered with bad throats.

It may help English teachers to realise some of the principal differences between the methods of the two countries if they see how our work appears to a German teacher.

The teacher in question had lived for some months in England, and had seen several of our schools. He had, in addition, given a good deal of attention to the London School Board's Exhibition of 1902; and his account was published in a Leipsic *Teachers' Journal*.

Unstinted praise was given to the bulk of the work, but a constantly recurring phrase was, "This is only the best work from some classes." With this criticism many of us will agree. An exhibition of selected work, done under more or less special conditions, is not an exhibition which is truly helpful to inquirers into pedagogical methods and results.

He thought, moreover, that there was too much lecturing in some of our schools. He was surprised that history was, in so many cases, only represented by historical readers of a very diffuse and elementary nature.

The object lessons in our infant schools he said were too disconnected, and too many separate lessons were given; in Germany, four or five lessons might be given on one object. He rather overlooked the point that our infant schools begin with children three years old, while the German children begin at six years of age; though we must admit the general trend of his contention.

In drawing, he generously allowed the great superiority of English schools. A visit of inquiry was paid by German teachers to English schools to investigate drawing methods, and the result was published in a form accessible to teachers.¹

¹ *Centralblatt für die gesammte Unterrichts-Verwaltung in Preussen* (*Journal of Public School Management in Prussia*). Berlin, June 1902.

CHAPTER VII

CURRICULA OF SCHOOLS

THE most noteworthy feature of German instruction is its steadiness. The Codes compiled in 1881 by Mr. A. Sonnenschein do not differ markedly from those in use to-day ; and Mr. Matthew Arnold's account of forty years ago remains substantially true.

It is a German correspondent of mine who says, "You will, no doubt, have observed that each German town is strongly convinced that she has got the best schools, and is marching *à la tête de la civilisation*. *Mais au fond des fonds, après en avoir vu une demi-douzaine, on peut dire, plus cela change, plus c'est la même chose.*"

English teachers know from much experience how difficult it is to allot an appropriate time on their time-tables to each of the various subjects of school instruction. To the German teacher, whether primary or secondary, this difficulty does not exist. The allotment of time is made for him, and each official *Lehrplan* (Syllabus of Instruction) contains in detail the number of hours and, consequently, the number of lessons which are to be given weekly in each subject. The last minister said, when he resigned, that there was too much similarity in the programmes and practice of the schools. All teachers agree that the

Lehrplan is necessary, but ask for more liberty in method and allotment of time to each subject of instruction. "The *Lehrplan*," say the teachers, "marks the standard, and as one teacher has to receive a class from another he must know what to expect." A minimum time allotment for subjects with an unallotted margin to be given in accordance with the head teacher's discretion would probably be the best solution of the question, both for England and Germany; for, if we err on the side of liberty in this respect, the Germans probably err on the side of rigidity.

I give in the following tables the time per week allotted to the various subjects in Berlin, Frankfort, and Hamburg elementary schools, and some time-tables of secondary modern schools in Berlin and Hamburg.

PRIMARY SCHOOLS

Berlin.—Boys and Girls

	VIII.	VII.	VI.	V.	IV.	III.	II.	I.
Religion . . .	3	3	3	4	4	4	4	4
German . . .	8	7	7	6	6	6	6	6
Object lessons . .	2	2	2	...	...	...	...	...
History . . .	...	...	...	2	2	2	2	3 (2)
Arithmetic . . .	4	4	4	4	4	4	4 (2)	4 (2)
Mensuration . . .	...	...	...	...	...	3 (0)	3 (2)	3 (2)
Natural history . .	...	...	...	2	2	4	4 (3)	3
Geography . . .	...	...	...	2	2	2	2	2
Drawing . . .	...	1	2 (1)	2	2	2	2	2
Writing . . .	...	2	2	2	2	1	1	1
Singing . . .	1	1	2	2	2	2	2	2
Physical exercises	2	2	2 (1)	2	2	2	2	2
Needlework . . .	...	...	(2)	(2)	(2)	(3)	(4)	(4)
Hours . . .	20	22	24	28 (30)	28 (30)	32	32	32

The figures in brackets are for girls, where their hours differ from those of the boys. Class I. is the highest class.

PRIMARY SCHOOLS—*continued*

Frankfort.—Boys

	VII.	VI.	V.	IV.	III.	II.	I.
Religion	3	3	4	4	4	3	3
German	10	8	8	7	8	9	8
Object lessons	2	2	...	...	...	...	...
Arithmetic	5	4	4	4	4	4	4
Mensuration . . . . .	...	...	...	...	2	2	3
History . . . . .	...	...	} 2	1	2	2	2
Geography . . . . .	...	...		2	2	2	2
Natural history . . . . .	...	...		2	2	2	2
Science . . . . .	...	...	...	...	...	2	2
Writing . . . . .	...	2	2	2	2	...	...
Drawing . . . . .	...	1	2	2	2	2	2
Singing . . . . .	...	...	2	2	2	2	2
Physical exercises	2	2	2	2	2	2	2
Hours	22	22	26	28	32	32	32

Frankfort.—Girls

	VII.	VI.	V.	IV.	III.	II.	I.
Religion	3	3	4	4	4	3	3
German	10	8	6	6	6	8	7
Object lessons	2	2	...	...	...	...	...
Arithmetic	4	4	4	4	4	4	4
Mensuration . . . . .	...	...	...	...	...	...	...
History . . . . .	...	...	} 2	1	2	2	2
Geography . . . . .	...	...		2	2	2	2
Natural history . . . . .	...	...		2	2	2	} 2
Science . . . . .	...	...	...	...	...	...
Writing . . . . .	...	2	2	2	2	...	...
Drawing . . . . .	...	1	2	2	2	2	2
Singing . . . . .	...	...	2	2	2	2	2
Physical exercises	2	2	2	2	2	2	2
Needlework	3	3	3	3	4	3	4
Hours	24	25	27	30	32	30	30

PRIMARY SCHOOLS—*continued*

Hamburg.—Boys

	VII.	VI.	V.	IV.	III.	II.	I.
Religion	2	2	2	2	3	3	2
German	10	9	9	9	6	5	6
English . . . . .	...	...	...	...	4	4	4
Object lessons	4	2	...	...	...	...	...
History . . . . .	...	...	...	2	2	2	2
Geography . . . . .	...	...	2	2	2	2	2
Natural history . . . . .	...	...	2	2	2	2	...
Science . . . . .	...	...	...	...	2	2	4
Arithmetic and algebra	5	5	5	5	4	4	4
Geometry . . . . .	...	...	...	...	...	2	2
Writing . . . . .	...	2	2	2	1	1	1
Drawing . . . . .	...	2	2	2	2	2	2
Singing	1	2	2	2	2	1	1
Physical exercises	2	2	2	2	2	2	2
Hours	24	26	28	30	32	32	32

Hamburg.—Girls

	VII.	VI.	V.	IV.	III.	II.	I.
Religion	2	2	2	2	3	3	2
German	9	9	8	7	6	6	7
Object lessons	4	2	...	...	...	...	...
History . . . . .	...	...	...	2	2	2	2
Geography . . . . .	...	...	2	2	2	2	2
Natural history . . . . .	...	...	2	2	2	2	...
Science . . . . .	...	...	...	...	2	2	3
Arithmetic	4	4	4	3	3	3	4
Writing . . . . .	...	2	2	2	1	1	1
Drawing . . . . .	...	...	2	2	2	2	2
Singing	1	1	2	2	2	2	2
Physical exercises	2	2	2	2	2	2	2
Needlework	2	2	2	4	5	5	5
Hours	24	24	28	30	32	32	32

SECONDARY MODERN SCHOOL

Berlin

	VI.	V.	IV.	III.	II.	I.
Religion	3	2	2	2	2	2
German	6	7	4	4	3	3
French . . . . .	...	...	8	8	6	6
English . . . . .	...	...	...	...	6	6
Geography and history	3	3	4	4	3	3
Arithmetic and mathematics	6	6	6	6	5	5
Natural history	2	2	2	2	2	...
Physics . . . . .	...	...	...	2	2	2
Chemistry and mineralogy . . . . .	...	...	...	...	...	2
Writing	3	3	...	...	...	...
Drawing	2	2	2	2	3	3
Singing	2	2	2	2	2	2
Physical exercises	3	3	3	3	3	3
Hours	30	30	33	35	37	37

Hamburg

	VI.	V.	IV.	III.	II.	I.
Religion	2	2	2	2	2	2
German	6	5	4	4	3	3
French	6	6	6	5	5	5
English . . . . .	...	...	4	4	4	4
Geography . . . . .	...	...	2	2	2	2
History	2	2	2	2	2	2
Mathematics . . . . .	...	...	...	5	5	5
Arithmetic	5	4	4	1	1	1
Science . . . . .	...	...	...	...	3	5
Natural history	2	2	2	2	2	...
Drawing . . . . .	...	2	2	2	2	2
Writing	2	2	1	1	...	...
Singing	2	2	2	(2)	(2)	...
Drill	2	2	2	2	2	2
Hours	29	29	33	32-34	33-35	33

The tables given show at a glance the allotments of time to various subjects which are considered suitable in the primary schools. A few of the most striking differences between the German schools and our own may be selected for comment. First, the relative simplicity of the German time-table is obvious; the subjects of instruction are fewer, and the classes are not broken up, as ours are, to attend special classes in manual training, drawing, housewifery, cookery, and laundry. There are some classes in manual training, and a beginning has been made in housewifery, but I am informed that these classes are not compulsory, and that the time given to the other subjects of school instruction is not encroached upon. Secondly, the attention paid to the study of the mother tongue¹ is markedly greater than in our own country; in this respect the German schools resemble those of France and America. Thirdly, the study of foreign languages, except in Hamburg boys' schools, finds no place in the curriculum of the ordinary primary school.

Perhaps the Hamburg syllabus is rather fuller than those of the other towns which I visited. It is significant that Hamburg began late; its general school system dates only from 1871. "We are like you," one Hamburg teacher said to me, "we began when London began." If we consider the scheme of

¹ The compulsory time allotted to English in the first class of the higher grade schools of London is three and a half hours per week for boys, and four and a half hours per week for girls.

work¹ which the London Board planned in its early days, and the similarly exaggerated syllabus² of the French in 1882, we may fairly draw the con-

¹ *The Work of the London School Board*, by T. A. Spalding. Professor Huxley's committee recommended—

(a) Essential subjects :—

1. Morality and religion.
2. Reading, writing, and arithmetic ; English grammar in senior schools, with mensuration in senior boys' schools.
3. Systematised object lessons, embracing in the six school years a course of elementary instruction in physical science, and serving as an introduction to the science examinations conducted by the Science and Art Department.

4. The history of Britain.

5. Elementary geography.

6. Elementary social economy.

7. Elementary drawing, leading up to the examinations in mechanical drawing and to the art teaching of the Science and Art Department.

8. (In girls' schools.) Plain needlework and cutting out.

(b) Discretionary subjects :—

1. Algebra and geometry.

2. Latin, or a modern language.

The Board had already decided, before receiving the committee's report, to include morality and religion, singing and drill.

The curriculum cannot be said to have failed for want of copiousness. It was a well-ordered, if somewhat one-sided, scheme of education, which honestly endeavoured to cover all the ground of instruction which could by any means be construed as elementary.

² *Les Nouveaux Programmes des Écoles Primaires*, by MM. Brouard and Defodon :—

L'article premier de la loi du 28 avril 1882 définit ainsi l'instruction primaire :

“L'instruction primaire comprend :

L'instruction morale et civique ;

La lecture et l'écriture ;

La langue et les éléments de la littérature française ;

La géographie, particulièrement celle de la France ;

L'histoire, particulièrement celle de la France jusqu' à nos jours ;

Quelques notions usuelles de droit et d'économie politique ;

Les éléments des sciences naturelles, physiques et mathématiques ; leurs

clusion that experience brings simplification and better adjustment to school conditions. In any case no surer means can be taken of disheartening the really able teacher, who wants to teach his pupils, and not simply to give lessons, than to present him with an impossible syllabus.

Valuable material for comparison with these time-tables will be found in a pamphlet on "The Teaching of History," by the late Professor Withers. A number of time-tables in actual use in English schools are given in this pamphlet; and the subject, with more illustrative examples and a comparison between English, French, and German time-tables, is further treated in the Report of the School-Management Committee of the London School Board for 1902.

In the case of secondary schools comparisons are difficult in the absence of official statistics, and in face of the great diversity of English schools. Probably, however, it would be safe to say,—First, that the

applications à l'agriculture, à l'hygiène, aux arts industriels, travaux manuels et usage des outils des principaux métiers ;

Les éléments du dessin, du modelage et de la musique ;

La gymnastique ;

Pour les garçons, les exercices militaires ;

Pour les filles, les travaux à l'aiguille."

Ce vaste programme avait d'abord été considéré comme obligatoire pour toute école primaire. Mais une expérience de quelques années a bientôt prouvé qu'il n'en peut être ainsi.

Subsequent regulation reduced this to—

L'enseignement moral et civique,—la lecture et l'écriture,—la langue française,—le calcul et le système métrique,—l'histoire et la géographie, spécialement de la France,—les leçons de choses et les premières notions scientifiques,—les éléments du dessin, du chant et du travail manuel (travaux d'aiguille dans les écoles de filles),—et les exercices gymnastiques et militaires.

Germans pay more attention to the study of their own language. Secondly, that the study of modern languages absorbs much more time than in this country. Thirdly, that history and geography are not omitted, as they sometimes tend to be here, in the later years of school life. Fourthly, that gymnastics and singing receive more attention.

CHAPTER VIII

EXAMINATION AND PROMOTION OF CHILDREN

1. *Prussia*.—In a girls' school in Frankfort the rector (head master) examines twice a year regularly, but gives additional tests in the lower classes.

The children are promoted from class to class once a year. No pupil goes up two classes in one year; indeed, the rector seemed astonished at my suggesting the possibility of it.

It would, I understand, be considered reasonable to retain as many as, but not more than, 10 per cent. in the same standard a second year.

No official statement as to the promotion of children is sent to the education offices (*Ober-Schul-Behörde*). I found, however, on further inquiry, that an annual return of children leaving school is made out, showing class and age on leaving. Class means standard defined by the *Lehrplan*. Such a return does act as a check to undue retention of children in the lower standards, and enables one school to be compared with another. I gather that children whose work is poor are frequently put forward, particularly if they have been in the school some time; dull children, who come from the outside, are kept back.

Every two or three years the inspector pays a lengthy visit. He both inspects and examines. He sets essays, arithmetic papers, &c., and gives in addition much oral examination. A notice is sent to the head teacher as a matter of courtesy and not for communication to the staff.

In Berlin the annual examinations, upon which the promotion of children mainly depends, are in the hands of the head teachers. In some schools, my informants tell me, the pupils are examined thoroughly, in others not; a wide variation of standard in such a method being admittedly inevitable, though the official syllabus (*Lehrplan*), which is compulsory, should give a unity and steadiness unknown in England. But a large factor in the promotion of children is the teacher's opinion of his boys' performances and promise. I am unable to find any direct check upon undue detention in the lower standards, but there is a consensus of opinion that to keep back as many as 10 per cent. in the same standard a second year would be wrong, especially if such pupils had been in the school for some time, and were not admitted from other schools.

The primary teachers thought that liberty of classification was much more of a reality in the classical and modern secondary schools, and, judging from the wide limits of age in the classes which I saw in those schools, I think their statement is correct. Though I am bound to say that, having regard to the regularity of attendance and the regularity of promotion which is stated to exist, it is difficult quite to account for the very considerable variation in ages often pre-

sent in the same class in the primary schools. The official age is one thing, the actual ages are, often enough, another, as examples from the statements given at the heading of the selected lessons clearly show. Yet I am of opinion, from a comparison of figures which show the varying ages within the same classes in London Board schools, that less variation of age is found in their classes than in ours. My suggestion that some children might advance two standards in one year was by no means favourably received, and I incline to the German view that a double promotion in one year is rarely advisable.

Some ten years ago, in England, freedom of classification by the teacher was permitted by the Day School Code. There was much hopeful promotion of brighter children, but experience has revealed unfortunate results, and now, almost universally in English schools, two standards in one year are no longer attempted, except with a very small proportion of abler pupils.

In one way the Berlin schools strikingly resemble our own; very few pupils indeed stay after they reach the age of fourteen, which, in Berlin, as in London, is the age of exemption from school attendance. The Continuation Schools, I am informed, will not receive pupils who cannot show that they are fit to profit by the course which they propose to enter.

2. *Saxony*.—In Leipzig the children are promoted from class to class annually. In answer to my questions as to how many were retained in the same class a second year, I found that the suggestion of 20 per cent. was indignantly negatived. I there-

upon suggested 10 per cent., and this again was negatived. Four per cent.? I questioned; and was answered, "Oh, yes, perhaps."

But this school was in an exceptionally good neighbourhood.

The promotions are decided upon at a conference of all the school teachers.

The directors examine mostly once a year, but not always so. Some classes receive, however, frequent examinations. In other classes the work is inspected rather than examined.

In a class of forty-six children, seven and eight years of age, in Leipsic, I enquired of the teacher how many would be kept down, and she answered, "Two or three, perhaps; not as many as six, as the director would object."

The children struck me as very big for their age; but such impressions, in the absence of definite measurements, are worth little.

The inspector visits without notice. There are fifty schools (departments) and his visit comprises examination as well as inspection, his examination being both oral and in writing. He does not examine except in classes which, he thinks, need it.

A complete record of each boy's work and conduct is contained in a little book which is filled up twice a year, lasts for eight years, and is given to the pupil on leaving.

There are no leaving certificates in Leipsic, nor any kind of leaving examination for primary schools.

3. *Hamburg*.—The promotion of children is based mainly upon the head teachers' examinations, as in

Prussia and Saxony. Inspectors, said the head teacher of one of the Hamburg primary schools, visit about every three years in ordinary cases. This visit frequently involves, if the school be a large one, continuous attendance at the school for fourteen or fifteen days. Every part of the school work is inspected, and much of it is examined; though I gathered that the inspector was under no obligation to examine classes under teachers who were well known to him for good work and who satisfied their head teachers.

In Hamburg a report is issued to the parents three times a year.

Every subject of school instruction receives a separate mark, as well as conduct, order, and industry at home and at school. These marks must be selected from those printed on the report form, and range from "very good" to "bad" with regard to behaviour, and from "very good" to "unsatisfactory" as regards the various school studies.

Leaving Examination in Secondary Modern Schools

(Abiturienten-Examen)

The secondary school leaving examination is conducted by an inspector, who visits the school for that purpose, and conducts the examination with the assistance of the director of the school.

A written examination must be given to each candidate in the following subjects :—

German literature and composition.

French.

English.

Mathematics.

In other subjects, such as religion, history and geography, natural history and science, the written examination is only given when the candidate is pronounced unsatisfactory or doubtful by the school authorities.

A four-hours' paper is set in German, and a four-hours' paper in mathematics, whilst a two-hours' paper suffices for the French and English.

I regret that I was unable to obtain any actual questions set at these examinations. The above facts will, however, enable any practical teacher to see where the energy and emphasis of the school work will be thrown.

In a *Realschule* of 400 boys, perhaps twenty would be presented for the leaving examination on each occasion. The scholars enter twice a year, at Easter and Michaelmas; about 200 would be in the Michaelmas classes, and about 200 in the Easter classes, and each section is divided into six classes, which gives thirty to thirty-five on an average in each class; twenty of these reach the top class, and are good enough for presentation for the leaving examination. The figures given are those of a particular school, which, however, was regarded as typical.

CHAPTER IX

SCHOOL DISCIPLINE

THE discipline of the primary schools is certainly of a very high order. The attention given to the oral lessons, which follow one upon the other, struck me as being remarkably well sustained. But when work was given to the children to be done by each, individually, in writing, there was not, except in rare instances, that hush of intense individual application which is so often found in our own country. In one respect the kind of discipline was unexpected. Judging from the schools one would suppose that England were the military nation and not Germany. For their drill is not military, and the marching in and out of school and class-room is not nearly so precise as with us. But the pupil's respect for his teacher is great, and is shown by many external marks of politeness. Very probably this attitude is largely a reflection from the general respect which is paid throughout Germany to the teacher. It is not easy for a foreigner to gauge accurately the attitude of parents towards the schools and the teachers; but, on the whole, there is little doubt that there is more active co-operation on the part of the parents than obtains here. German compulsory education, it must be remembered, is mostly about a century old, and this may account for much.

The law as to compulsory attendance is rigid and strongly enforced. The law-breaker cannot expect to have public opinion on his side.

I was assured that the progress cards which were forwarded at regular intervals were really of considerable interest to the parents generally, and that this interest was frequently shown by visits to the head teachers, who, as I have mentioned elsewhere, had a special time, usually some one hour in the morning, in which visitors could receive attention.

I more than once noticed, in girls' classes under male assistant teachers, some amount of tittering. Teachers who have had experience of mixed schools will know what defects in discipline this indicates. On the other hand, in the great majority of such schools, the discipline was unexceptionable; though, in my judgment, there was a lack of that sweetness and gentle yet insistent constancy which characterise the relation of the best women teachers to their pupils.

The discipline in secondary schools did not impress me so favourably; entries and dismissals were confused and noisy, and the self-control, which one would expect from children of this age and class in place of the more rigid system suitable for younger and rougher children, did not seem to me to have developed.

At a secondary modern school in Hamburg, when the front doors were opened, a violent rush took place along the beautiful corridors and staircases. During the recreation intervals, however, certain teachers were in charge of the corridors and stairs. A list of teachers responsible was hung up in the rector's

room. Still, the discipline generally was of a high order, and insubordination almost unknown.

Notwithstanding the training of the schools, juvenile criminality in Germany, where discipline is strict, is on the increase, as it is in France, where discipline is relatively mild, and as it is, according to Mr. Morrison, in England also.¹

Corporal Punishment

In Frankfort a book was kept, in which entries were made of cases of corporal punishment.

In Leipsic an assistant mistress told me that teachers were allowed to use moderate corporal punishment. Some directors wish the cases to be entered in a book, but this is not general. The teacher must provide the cane herself.

The assistant teachers, as we should call them, in Hamburg are permitted to use corporal punishment. They are limited to the infliction of three stripes, which must be administered in the presence of another teacher.

In secondary schools the teachers are not absolutely forbidden to use corporal punishment, but they are expected to use little; if not excessive, no notice is taken. The law, as with us, puts the teacher *in loco*

¹ *Juvenile Offenders*, by W. D. Morrison. "According to the official returns of every civilised state, offences against the criminal law are steadily increasing in number; it is sometimes maintained that they are diminishing in seriousness, but the apparent diminution in this direction arises from alterations of judicial procedure of a mitigatory character, and from a growing unwillingness among the public to prosecute."

parentis, and the rector has very full powers of administering corporal punishment.

Home Lessons

In the German secondary schools, as in our own, home lessons play a most important part. With some thirty-seven hours per week of school instruction in addition, there is little doubt that over-pressure is a very real thing in Germany. The school authorities are alive to it, and psychologists are giving their attention to the matter and endeavouring to find a method whereby fatigue and over-fatigue can be objectively measured, so that some definite guidance may be obtained as to the work which can be done without injury. In the primary and higher primary schools again, home lessons are the rule. In the Berlin time-tables the subject of the day's home lesson, together with the time to be given to it, is definitely set out, and though I did not see this in any other town, yet home lessons are obligatory in all. Some teachers did not think that the home lesson usually amounted to much, and said, that where overstrain existed, it was the fault of the parents for insisting on too much home lesson. This kind of fault would be a joyful surprise to many of our town teachers in primary schools, for there is very little doubt that, in many cases, the antagonism of the parents makes home lessons ineffective if not impossible.

In a Berlin primary school the home lessons, one evening, for the second class boys (ages twelve to thirteen) were—

1. An exercise on the parallelogram.
2. Three problems from the arithmetic books.
3. The study of Spain and Italy.

A School Festival

The following is an account of a celebration in a middle school, at Leipsic, on Sedan-day, September 2nd.

The commemorative gathering was held in the large hall of the school (*Prüfungs-Halle*)—a fine, lofty room, bare as to pictures, but with busts of the Kaiser and Bismarck. The upper classes, boys and girls, were present, all the teachers, and about a hundred of the children's parents.

A long address was read lasting thirty-six minutes, and was listened to with solemn silence, after which recitations alternated with songs of a patriotic kind. The recitations, of which there were six altogether, were splendidly rendered, except, perhaps, for what might be regarded as a slight excess of emphasis. The part songs were sung extremely well. The folk songs were, of course, simpler, and here the singing was so vigorous that it often bordered on the coarse. The conducting would have delighted any one who knows what conducting a large mixed choir of boys and girls involves. One recitation was *Der König von Preussen*, another *Gerettet das Vaterland*. There was no applause, but quiet satisfaction shone on every face. Then the director gave a short address:—

"Why are we here? We are here in thankfulness," and so on. "Now what have we to do to express

our thanks?" "Who will love our Fatherland must know how to learn." "So wrote Goethe, when he was a student, to his sister Cornelia, and that is the motto which I wish you all to remember to-day."

Then the year's prizes were distributed, and each prize-winner shook hands with the rector, an honour which, I am told, is much prized, but it tended to become mechanical. Finally the proceedings finished with the song of *Deutschland über alles*. Girls and boys, piano, teachers, and many of the parents, all took part lustily. In one hour twenty minutes from the commencement the celebration was over. The impression made upon me was profound; a grave, pious, solid assembly, met in no Mafeking spirit of riotous jubilation, but in a sober, grateful, God-fearing way to celebrate their great triumph. With such a people it would be much to be friends; it would be disquieting to have them for enemies.

PART II

CHAPTER X

ARITHMETIC

Frankfort. — Primary School.¹ Class VII. First School Year. A large class of girls of six and seven years of age, under a woman teacher.

Questions in arithmetic were asked by the head master.

Question. How many fingers do I hold up ?

Answer. Five.

Question. Take away two.

How many now ?

Answer. Three.

Question. Now take away one, how many are left ?

Five is four and how many more ?

Five is two and how many more ?

And four is five less ?

Answer. One.

Question. And three is five less ?

Answer. Two.

This seems trivial to us, but we must remember the absence of the infant school training, and also the limitation of the *Lehrplan*. In the first school year children are not expected to deal with numbers higher

¹ In Frankfort and Hamburg the complete primary school course is divided into seven standards or classes, in Berlin and Leipsic into eight.

than 20, in the second year 100, in the third year 1000, and in the fourth year 1,000,000.

Leipsic.—Primary School. Class VII. Second School Year. Forty-six children present, seven to eight years of age.

In this class the numbers dealt with do not exceed 100 as a total.

The lesson opened, as is almost invariably the case in German schools, with mental exercises, given out orally, not written on the blackboard.

Take away 29 from 54

„ „ 27 „ 96

„ „ 34 „ 71

Add together 49 and 29

„ „ 17 „ 33

„ „ 27 „ 18

These children added the tens first and then the units; but I do not know if this method obtains generally.

At my request the teacher was kind enough to give the following problem:—

Fred has 36 apples, Charles has 12 more than Fred has. How many have they together?

This was too much for the class, and the teacher substituted:—

How many has Charles?

My next problem was:—

In one field there are 37 trees, in another 12, in another 7, and in another 9. How many altogether?

This was too difficult; but, when, at my suggestion,

the fields were drawn on the blackboard and the numbers inserted, thus—

$$\boxed{37}$$

$$\boxed{12}$$

$$\boxed{7}$$

$$\boxed{9}$$

all the children who answered were correct.

They counted on fingers, and I was told that they did so in this class, but it was discouraged later.

Another problem was:—

There are 25 trees in a row ; 17 are blown down and 2 more planted. How many now ?

The first three answers were wrong and the fourth correct.

The next problem was:—

A little girl has 14 apples. She has 3 brothers. She gives the same number to each. How many can she give each one, and how many has she left ?

Twelve hands were up for this ; the first answer was right.

The arithmetic in books for the last lesson showed :—

$$76 - 34 = 42$$

$$89 - 46 = 43$$

$$95 - 72 = 23$$

$$76 + 19 = 95$$

$$28 + 36 = 64$$

Two points impressed me much. First, the almost exclusive use of auditory memory in solving mental arithmetic, in contrast with our readiness to employ the visual memory. Second, the constant help of the teacher by repeated questioning.

I commented on our practice of leaving the children to work more for themselves. This teacher, who had been in England for some time, thought that the different method was dependent on the difference in national character. "Leave our children alone," said she, "and they would do nothing."

Hamburg.—Primary School. Class VI. Second School Year. Fifty-one girls present, of seven and eight years of age, under a woman teacher.

The lesson opened with computation. Numbers were given out orally, and the answers were given orally by certain children who were called upon.

The following sums were given:—

$$(1) 25 + 21$$

$$(2) 46 + 32$$

$$(3) 86 + 13$$

There was much movement with the hands among the children, and, on my calling attention to this, the mistress had all hands placed on the desks so that any movements of the fingers could be clearly seen. In the second school year only the weaker ones are allowed to count on their fingers, said the teacher, but, during the first school year, all children are permitted to do so.

Then followed a few sums in subtraction, *e.g.*:—

How much less is 86 than 99 ?

And then a series of simple problems, also given orally, with no help from visual perception.

These were not answered so well, and the following were given at my request:—

(1) There were 36 soldiers in the street, then 12 more came ; how many were there then ?

(2) There were 3 rows of trees, and 7 trees in each row ; how many trees were there altogether ?

(3) Seven children divided 49 nuts among them, so that each had the same number ; how many had each one ?

(4) There were 35 girls in one room, 13 in another, and 7 in another one ; how many girls were there in the three rooms ?

The first was well answered ; the second well done when illustrated on the blackboard ; the third and fourth were not well done, though the teacher thought No. 4 was easy for the children, and illustrated it on the blackboard.

The children were under very good discipline and listened to the teacher with concentrated attention, but in working the problems muttered a great deal and looked at each other.

The same problems could easily be given to English primary school children of corresponding age, and comparisons instituted.

Leipsic.—Primary School. Class V. Fourth School Year. Boys. Thirty-two present, nine to ten years of age.

10,000 was written in figures on the blackboard, and the teacher questioned,

How many thousands ?

How many hundreds ?

How many tens ?

The answering was in complete sentences, "Ten thousand contains one hundred hundreds," and so on.

I was anxious to see what power of computation the children had, and the director kindly wrote the following addition sum on the blackboard :—

$$\begin{array}{r} 3,647 \\ 123 \\ 17,927 \\ 843 \\ \hline \end{array}$$

A selected boy stood up and did this very rapidly and correctly. Then 252×6 was correctly worked in the same way. Then four sums were set for the pupils to work in their books.

$$\begin{array}{llll} (1) \begin{array}{r} 4655 \\ 297 \\ 48 \\ \hline 1598 \end{array} & (2) \begin{array}{r} 9768 \\ 7893 \end{array} & (3) 48 \times 9 & (4) 465 \div 5 \end{array}$$

There was an absence of that hushed and concentrated attention which characterises our best classes when work is given them to do, and seven boys looked at another's paper in the first five minutes. The addition was worked correctly in most cases, but the subtraction was a complete failure, whilst the division was worked thus—

$$\begin{array}{r} 465 \div 5 = 93 \\ 45 \\ 15 \\ 15 \\ \hline \dots \end{array}$$

This class, however, the director said, was not a strong one; and the fact must be borne in mind when we estimate this work as that of children of nine and ten years of age.

Hamburg.—Primary School. Class IV. Fourth School Year. Pupils were about ten and eleven years of age; between fifty and sixty present.

The arithmetic books were out, and a brief survey of these was enough to show that, in this school, computation was not overlooked. I had found, generally speaking, in the German school arithmetic books, that there was a deliberate avoidance of high numbers, and that sums were often made artificially easy by a careful choice of figures.

The following were picked out by me from the book as fair examples of the multiplication and subtraction tests—

$$(1) 93,567 \times 71,583$$

$$(2) \begin{array}{r} 4,000,003 \\ -2,746,726 \end{array}$$

At my request the following sum was placed upon the blackboard—

$$\begin{array}{r} ^{10\ 10\ 10}000 \\ 987 \\ \hline \hline \end{array}$$

and was worked orally by selected pupils. The method employed was one of decomposition and there was no lack of good answering, but of course the teacher's questions, as is so often the case in oral teaching, carried with them the major part of the difficulty involved.

Another sum was set on the board by the teacher and worked orally

$$\begin{array}{r} 670,800 \\ - 387,986 \end{array}$$

The answering here was equally satisfactory. Any inference from such satisfactory answering to arithmetical capacity would be insecure; yet I was of opinion, from the nature of the mental arithmetic and from the use of books containing large numbers, that arithmetic throughout this school was above the average, and so could hardly be regarded as typical.

Berlin.—Primary School. Class V. Fourth School Year. Forty-six children present, aged nine, ten, and eleven, with a few of twelve years.

The director was kind enough to let me set a test in arithmetic which did not involve problems, but simply accuracy of computation.

I turned to the arithmetic books and proposed to set some sums in time measure, but the teacher preferred a metric example, so that the following were decided upon and written on the blackboard :—

3621 metres.

924 „

876 „

1234 „

—
—

1348 metres.

729 „

—
—

9734 kilos.

79

—

—

—

The teacher of the class thought that the sums were easy, and that the children would do well. They began to work the sums on paper, and twelve minutes was decided on as a reasonable time for the test. I noticed the absence of that attentive stillness which, in our schools, is more marked when the children are doing an exercise themselves than when the teacher is teaching. In Germany the attention to the teaching is, on the average, closer than our own, but the pupil's attention to his own work is not so concentrated. There was, moreover, reference by some of the scholars to the work of others.

The following were the results :—

Twenty-seven pupils worked three sums correctly.

Fourteen " " two " "

Five " " one sum "

The teacher seemed pleased with the result, and himself set the following exercise in time measure :—

Add together—

Years.	Months.	Days.	Hours.
271	8	17	9
135	0	5	11
69	11	19	0
17	10	0	22

Twenty-seven answers were correct.

Berlin.—Primary School. Class III. Sixth School Year. Forty boys present. Official age, eleven.¹

Boys were allowed to count on fingers for the first school year, and, in a few, the habit seemed to survive.

¹ The boys certainly appeared older, and I noted on several occasions that, in Berlin, the children seemed older for their respective standards than in the smaller towns. There is some reason to suppose that a similar relation exists between the ages in London, and those in provincial towns.

The lesson commenced as usual with Mental Arithmetic.

The following sums were given :—

$$\frac{1}{2} + \frac{3}{4} =$$

$$\frac{3}{4} + \frac{7}{8} =$$

$$\frac{1}{2} + \frac{2}{3} =$$

$$\frac{3}{4} + \frac{1}{5} =$$

In all these examples the pupils were required to stand up and call out the answer thus : One-half plus three-fourths equals one and one-quarter ; and so on.

The mental arithmetic was good, but the children muttered very audibly.

The next section of the lesson was a difficult addition worked by a boy on the blackboard.

	60		
17 $\frac{2}{3}$	20	40	
19 $\frac{5}{8}$	10	50	
35 $\frac{7}{12}$	5	35	
128 $\frac{4}{5}$	12	48	
33 $\frac{9}{10}$	6	54	
3			
235 $\frac{47}{80}$			

2	3, 6, 12, 5, 10
3	3, 3, 6, 5, 5
5	1, 1, 2, 5, 5
	1, 1, 2, 1, 1
	L.C.M. = 60.

$$\frac{227}{80} = 3\frac{47}{80}.$$

First the L.C.M. was obtained and placed above the second column. The next steps are obvious, but the arrangement struck me as new and well worth trying. Column 3 was added up, and the whole number placed under column 1.

The teacher's questions were a constant stimulus to the boy who was working the problem ; but whether

this was necessary for him, or merely expository to the class, I am unable to say.

Berlin.—Primary School. Class III. Sixth School Year. Forty-three present. Nineteen pupils were eleven years old, sixteen were twelve, and eight were thirteen.

Through the courtesy of the director I was allowed to give a problem from a part of the arithmetic book recently studied.

The problem was—

1 dozen articles cost $18\frac{4}{5}$ marks. What are the receipts of a merchant who sells

- a.* 45 dozen
- b.* 76 „
- c.* 84 „
- d.* 68 „ ?

The teacher said this class was very weak in arithmetic. I inquired what effect that would have on the annual promotion, and was told that, though not more than five would usually be kept back in a class of this size, yet here more would be kept down. The tabulated results in arithmetic certainly bore out the teacher's statement as to weakness, and the results were as follow—

Thirty-five	worked	<i>a</i>	correctly.
Thirty-two	„	<i>b</i>	„
Twenty-six	„	<i>c</i>	„
Five	„	<i>d</i>	„

but many pupils had not worked *d* when the teacher called the answer out. The discipline during the working was not what we should call excellent; there was much relaxation of attention and some references on the part of the children to each other's work.

The teacher then gave exercises in mental arithmetic, but these did not reach the usual high level of excellence. I do not think it was a typical class in this subject.

Hamburg.—Primary School. Class III. *a*. Fifty-three boys present. Twenty-five boys were eleven years old, eleven were twelve, five were thirteen, and two were fourteen.

The boys had been working in their books, but, on my entry, the teacher had them put away, and questioned in mental arithmetic. The discipline was excellent, and nearly every pupil raised his hand to answer every question. As was almost invariably the practice in Germany, the questions were entirely oral. The following are specimens of them—

$$\frac{15}{18} \div 3; 12\frac{14}{15} \div 2; \frac{72}{13} \div 4.$$

The usual accuracy and readiness were shown in answering.

At my request the teacher was kind enough to set the children three sums from their arithmetic books to be worked by them on paper. The sums were—

$$76\frac{1}{2} \div 17 =$$

$$145\frac{2}{3} \div 19 =$$

$$154\frac{4}{5} \div 18 =$$

Fifty-one worked the first correctly, and thirty-three worked the second correctly; the third result was not tabulated, as some children had not finished the sum.

The boys had worked with that intense hush which told of concentrated effort; they were closely attentive to their own papers, and were quick, quiet, and ready. It was not usual to find written arithmetic so well done, and I asked for more.

The next sums given were—

$$34\frac{1}{4} \div 15 =$$

$$45\frac{5}{8} \div 20 =$$

Forty-two boys worked the first of these correctly, and forty-three worked the second correctly. The head master of this school was of opinion that the reading, writing, and arithmetic of the Hamburg primary school pupil were unusually good, as the merchants of the town laid special stress on these acquirements.

Frankfort.—Primary School. Class III.*b*. Fifth School Year. Ages, eleven and twelve.

Seconds were written on the board to be reduced to months, weeks, hours, and minutes. Much time was spent by the boys giving oral accounts of every step and every result. The numbers dealt with were large, as there is no limit to the notation in this class.

The teacher's exposition as usual was admirable, every point in the process being suggested by his questions.

At my request the following exercise was given to the class.

Bring 364,217 seconds to days.

It was my wish that the boys should do this alone, but the teacher said it must first be done on the board, and a boy was chosen to come out and work it. The teacher elicited the method by his questions.

How many seconds in a minute ?

What number shall we divide by ? and so on.

The working was put down as follows :—

$$364,217 \div 60 = 6070 \text{ minutes.}$$

$$\begin{array}{r} 42 \\ \hline 17 \text{ seconds.} \\ \hline \end{array}$$

$$6070 \div 60 = 101 \text{ hours.}$$

$$\begin{array}{r} 70 \\ \hline 10 \text{ minutes.} \\ \hline \end{array}$$

$$101 \div 24 = 4 \text{ days.}$$

$$\begin{array}{r} 5 \text{ hours.} \\ \hline \end{array}$$

In answer to my request that the boys should proceed to work the sum individually in their books, the teacher said they had not time then ; they would do it at home. This they doubtless did, but I am unacquainted with the result.

Frankfort.—Middle School. Class III. Official age, eleven to twelve years.

$$\frac{239}{15} \div \frac{223}{14} = \frac{239}{15} \times \frac{14}{223} = \frac{3346}{3845}.$$

This sum was done mentally by a few children. Attention to mental arithmetic seems essential, as the

metric system in some ways makes computation more cumbrous.

There was much whispering and confusion, but not disorder, during the lesson, which presented no special feature except the difficult mental exercises with which it opened, the one given above being a fair specimen.

Leipsic.—Primary School. Class II.*b*. Girls. Thirty-nine present. Ages, twelve and thirteen.

A Lesson on Percentage.

Pro cent written on the blackboard.

Teacher. What language is this ?

Pupil. Those words are Latin.

Teacher. What other word have we like this ?

Pupil. We have the word centimetre.

Teacher. What is cent. a part of ?

Pupil. It is a part of centum.

Teacher. What is meant by pro ?

What is meant by cent. ?

What is meant by pro cent. ?

Then the teacher gave a short account of the term “per cent.” in commercial transactions, followed by questions.

This lesson was not a new one, but a development of a preceding lesson.

Then followed a number of short problems to be answered orally.

How much is 10 per cent. of 2000 marks ?

What fraction is 20 per cent. ?

What per cent. is the sixth part of a hundred ?

The children stated these at length, but the arrange-

ment depended upon the questions of the teacher, which proceeded systematically, point by point, as is usual with German teachers.

The teacher was kind enough then to let me select a problem from the books, and to ask the children to work it on paper. I chose a percentage problem, but as they had not worked these, I went to the preceding exercise for a sum in Rule of Three. This was the problem—

1.5 hectolitres cost 1.8 marks; how much can one get for .80 marks?

The teacher assured me that this was not too hard and the children began. In the first minute half-a-dozen children were looking on others' books, and in two minutes the teacher was correcting one child in a voice audible to the rest. After seven minutes the class gave it up, and one bright little girl, with the rector's aid, worked the sum on the board.

Some children had begun to work by the method of unity and some used the dots signifying ratio and proportion.

The rector was dissatisfied and gave an easier problem for the children to work by themselves.

If 9 kilogr. cost $6\frac{3}{4}$ marks, how much will 4 kilogr. cost?

The method adopted by most was as follows—

9 kilog. cost 6.75 marks

1 " " $6.75 \div 9$
 $= .75$ (worked by long division)

$$\begin{aligned} 4 \quad , \quad , \quad .75 \times 4 \\ = 3.00 \\ = 3 \text{ marks.} \end{aligned}$$

Sixteen girls were right.

Eleven girls had not finished.

Twelve girls had finished and were wrong.

It does not seem that the admirable exposition of the German teacher is, in itself, sufficient to produce accurate working of problems by the scholars.

Berlin.—Primary School. Class II. Seventh School Year. Thirty-two boys present. Ages, eleven, twelve, and thirteen.

The following exercise was worked on the black-board, the usual question and answer method being followed. The calculations were accompanied by audible articulatory movements, and the number of questions seemed to me far in excess of those needed, except to boys who were just beginning vulgar fractions—

$$\begin{array}{r|l}
 & 60 \\
 9\frac{1}{4} & 15 = 15 \\
 10\frac{3}{5} & 12 = 36 \\
 11\frac{5}{8} & 10 = 50 \\
 8\frac{2}{3} & 20 = 40 \\
 7\frac{1}{2} & 30 = 30 \\
 + 2 & \\
 \hline
 47\frac{51}{80} & \frac{171}{80} = 2\frac{11}{80}
 \end{array}$$

Finding L.C.M.

$$\begin{array}{cccccc}
 4 & 5 & 6 & 3 & 2 & \\
 2 & & 2 & & & \\
 2 & & 3 & & & \\
 \hline
 2 & 2 & 5 & 3 & = & 60
 \end{array}$$

The example thus detailed shows the method employed. The use of the sign of equality is peculiar in the second column, and the method seems strange

to English teachers, who would set such a sum out thus—

$$\begin{array}{rcl}
 9 + 10 + 11 + 8 + 7 + \frac{1}{4} + \frac{3}{8} + \frac{5}{8} + \frac{2}{8} + \frac{1}{2} & & \\
 = & 45 & + \frac{15 + 36 + 50 + 40 + 30}{60} \\
 = & 45 & + \frac{171}{80} \\
 = & 45 & + 2\frac{51}{80} \\
 = & 47\frac{51}{80}. &
 \end{array}$$

The difference seems small to the adult mind, but I should like some English teachers to try the German method, and keep a tabulated system of results, so as to compare them with those obtained in a corresponding class taught on our own method.

The children were then set to work the same exercise by themselves in their books, but at my request the teacher gave the following numbers to be added, directing the boys to leave the others until the next lesson—

$$\begin{array}{r}
 8\frac{1}{3} \\
 9\frac{3}{4} \\
 4\frac{1}{8} \\
 2\frac{2}{5}.
 \end{array}$$

Eighteen out of the thirty-two boys present obtained the correct answer.

Leipsic. Class I. Boys, thirteen and fourteen years old.

The teacher, who was sitting (an unusual thing in German primary schools), commenced the lesson by exercises in mental arithmetic. He had himself

written the problems, and called them out one by one. Through his courtesy I am able to reproduce them—

(1) Reckon mentally—

$$\frac{3}{4} + 0.213. \quad \text{Ans. } 0.963.$$

(2) $\frac{1}{2} + 0.124. \quad \text{Ans. } 0.624.$

(3) How much is the second answer less than $\frac{5}{8}$?
Ans. 0.001.

(4) How many must you take away from $\frac{2}{3}$ so that $\frac{1}{4}$ remains? *Ans.* 0.416.

(5) Add 0.063 to $\frac{4}{5}$; how much is the answer in excess of $\frac{3}{4}$? *Ans.* 0.113.

(6) $\frac{2}{3} + 0.034 - \frac{1}{5}$ (answer in a vulgar fraction).
Ans. $\frac{1}{2}$.

(7) $\frac{2}{3} + \frac{1}{7}$; how much is this more than $\frac{1}{3}$? (answer in a decimal fraction). *Ans.* 0.031.

We must remember that the boys were required to trust to auditory memory only, for the tests were not written down; that feature constitutes a very important and far-reaching difference between German methods and our own. I have no doubt myself that, simply from hearing these questions called out, our own boys would have accomplished little, but the German boys seemed quite ready and fluent, as well as correct, in their oral answers. It is impossible, without getting a separate answer from every pupil (a rare thing in Germany, though I found it done in an excellent girls' school in Hamburg), to say exactly how many could work the sums correctly, but my own impression was that the bulk were doing so.

Much attention is given to vulgar fractions ; they supply a discipline, the teachers say, which the metric system does not yield. The rector, after the mental arithmetic, permitted me to set a problem from a page in the arithmetic books which had been recently worked through.

A receives $\frac{1}{4}$ of an estate, B $\frac{2}{5}$, and C receives $\frac{1}{2}$ less 2965·5 marks. (1) How great is the whole property ? (2) How much does each receive ?

It was my wish that the pupils might straightway work the problem in their books ; but, faithful to the German method, the teacher gave a preliminary explanation, and, when the boys had indeed settled down to work it, rendered assistance here and there. In the boys' books there was none of that orderly arrangement, with clear statement point by point, which is so strong a feature of the German teacher's own method. From the oral exposition the boys seemed to remember the total of the fractions—

$$\frac{1}{4} + \frac{2}{5} + \frac{1}{2} = \frac{23}{20},$$

but after this point there was extreme diversity. One of the best boys' books showed the following—

$$\begin{aligned} \frac{23}{20} - \frac{20}{20} &= \frac{3}{20} \\ 2965\cdot50 \div 3 &= \frac{1}{20} = 988\cdot5 \\ 988\cdot5 \times 5 &= A \ 4942\cdot5 \\ &\times 8 = B \ 7908\cdot0 \\ &\times 7 = C \ 6919\cdot5 \\ &\hline &19770\cdot0 \end{aligned}$$

No statements in words were made. There were thirteen correct answers out of thirty-six which were

given to the first half of the problem. It does not seem that proficiency in mental arithmetic necessarily leads to the power of sustained statement and accurate working of a written problem. The experience of many of our own teachers who have for some years taught Scheme B arithmetic (see "Day School Code") seems to point to the same conclusion, though no conclusive tests have been made under experimental conditions.

Frankfort.—Middle School. Class I.—Arithmetic and Mensuration. Boys, thirteen to fifteen years of age.

A boy came to the blackboard to draw a circle with compasses.

This was hardly necessary if the children could do this already, as they most certainly could.

Teacher. How do you draw a circle?

Pupil. "We place," so and so.

This again, a good exercise in language, was not mensuration.

The boys do everything, I was told. It was this aspect of German teaching which Mr. Matthew Arnold praised so highly. In so far as it is true, it is continually extended to operations where it might very well be dispensed with after a time, as, for example, the drawing of the circle on the blackboard and the oral description of lines; and in the best sense of all it is not true, for the whole continuity and connectedness of the lesson depend on the teacher, whose skilful questions suggest the sequence.

A point C was taken outside the circle and straight lines drawn meeting the circumference in A, B, D, E.

Then followed questions such as—

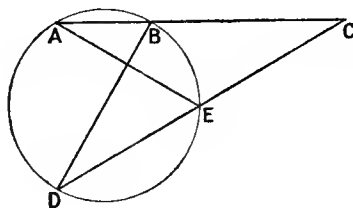


FIG. 1.

What is BC ?

Ans. BC is a piece cut off AC.

Ques. What is EC ?

Ans. EC is a piece cut off CD.

Then we had repetition up to this point, with several questions that to me seemed superfluous, for the real work had yet to begin.

The teacher proceeded—

Let $AC = O$, $BC = o$.

Let $DC = S$, $EC = s$.

Join AE, BD.

Consider the triangles AEC and BDC.

Now $\angle C$ is common.

\angle at A = \angle at D, because they are angles in the same segment of a circle.

\angle at B = \angle at E, since the angles of any triangle equal two right angles.

Hence the sides of these triangles are proportional.

In all this I missed the insistence on the reference to the propositions which justify the argument. This is made more of by English teachers, but the exposi-

tion was very good, as is usual in German primary teaching.

The teacher continued—

Which is the longer side of triangle AEC, and which is the longer in triangle DBC?

So that we have $DC : BC :: AC : EC$,

$$\text{i.e. } S : o :: O : s.$$

What is this?—A proportion.

What is a proportion?

Now express this in words; now in letters.

Exercise.—To describe a rectangle equal to a given rectangle, one side of the latter being given. Ss is the given rectangle, o is the given side.

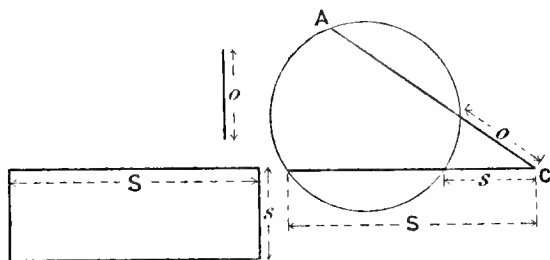


FIG. 2.

Cut off from S a piece equal to s . From C draw a line equal to o . Then we have three points through which we can draw the circumference of a circle which cuts the line C_o produced at A . We now have, by the proposition we have just worked, that $Oo = Ss$.

The children would then write this out at home. But there was a lack of written work given out to

them, to be done in school. They had few opportunities for continuous application in an unassisted way in school hours.

Hamburg.—Primary School. Class I.a. Forty-six girls present. Ages, twelve, thirteen, and fourteen.

The lesson opened, as usual, with mental arithmetic. The teacher impressed on me that mental arithmetic in this school implied, not simply computation, but a solution of problems, which required three, or even four, separate processes or steps. From the examples which he gave I should have drawn this conclusion myself; but I was surprised to find some counting on fingers.

At my request, the teacher set two sums to be worked on paper.

The sums were—

1. If 12 workmen earn in 16 days 884·16 marks, how much will 18 men earn in 12 days?

2. At what rate per cent. will 5460 marks amount to 5651·10 in one year?

The children began the work and the teacher passed about the class marking the work, some of the children communicating with others. In twenty minutes the work was stopped and the sums marked. Twenty-eight girls worked the first sum correctly, and twenty-six worked the second correctly; nineteen had, however, not completed the second sum.

The teacher was disappointed at the result and pointed out that, in his opinion, three hours a week was not sufficient time for arithmetic. I certainly

agreed, if it was to be carried up to the standard indicated by the sums he had set. The head master said, however, that this class was weak in arithmetic.

He laid great stress on mental arithmetic and said that his method of testing it produced better results than the usual purely auditory method. He wrote his examples on the board for his examinations, and each pupil set down the answers, and the answers only, on a paper which was afterwards marked by the teacher. He thus ensured that every girl worked some, at least, of the exercises. I am, through his courtesy, enabled to give his last examination in mental arithmetic for this class—

1. $38\cdot75$ marks + $22\cdot50$ marks = $61\cdot25$ marks.
2. $333\cdot45$ marks - $34\cdot40$ marks = $249\cdot05$ marks.
3. Interest on 1575 marks at 3 per cent. = $47\cdot25$ m.
4. 252 articles at 4 marks a dozen = 84 marks.
5. 1 metre costs $6\cdot37$ m., what will 10 metres cost ? = $63\cdot70$ m.
6. If 1 metre cost 85 pfennig, what will 20 metres cost ? = 17 marks.
7. For 325 m. you obtain 1 hectolitre, what is the price per litre ? = $3\cdot25$ m.
8. A wall can be constructed by 9 workmen in 16 days, how many workmen must be employed to finish the wall in 12 days ? = 12 workmen.
9. $5\frac{2}{3} + 3\frac{3}{4} = 9\frac{5}{12}$.
10. $7 \times 6\frac{1}{5} = 43\frac{2}{5}$.
11. If 1 pound ($\frac{1}{2}$ a kilo.) cost 45 m., what will the price of 1 gramme be ? = 9 pfg.
12. What is the number which multiplied by 12 is equal to 4×20 ? = $6\frac{2}{3}$.
13. Of a piece of cloth seven-eighths were sold;

there remained $4\frac{1}{2}$ metres ; what length was the whole piece ? = 36 metres.

14. A man walked $30\frac{1}{2}$ kilometres ; that was half the distance less 8 kilometres. What was the entire distance ? = 77 kilometres.

15. 20 kilogrammes cost 4·80 m. more than 18 kilogrammes ; what would be the cost of 1 kilogramme ? = 2·40 m.

16. $128 \div 16 = 8.$

17. $108 \div 12 = 9.$

18. $54 \div 18 = 3.$

19. $52 \div 13 = 4.$

20. $95 \div 19 = 5.$

The following table shows the number of children who worked the above examples correctly :—

No. 1 was worked correctly by 37 pupils.					
"	2	"	"	30	"
"	3	"	"	18	"
"	4	"	"	28	"
"	5	"	"	41	"
"	6	"	"	39	"
"	7	"	"	41	"
"	8	"	"	32	"
"	9	"	"	27	"
"	10	"	"	32	"
"	11	"	"	13	"
"	12	"	"	7	"
"	13	"	"	15	"
"	14	"	"	3	"
"	15	"	"	21	"
"	16	"	"	30	"
"	17	"	"	41	"
"	18	"	"	41	"
"	19	"	"	42	"
"	20	"	"	39	"

There were 46 pupils present at the examination.

Berlin.—Secondary Modern School. Class IV.*m*.
Forty boys present, thirteen, fourteen, fifteen,
and sixteen years of age.

The boys were, with the teacher's aid, correcting on the blackboard an arithmetical exercise worked at home. This class was rapidly nearing the end of its educational year.

The sums were as follow—

1. $506\cdot7482 \times 0\cdot7503$.
2. $2\cdot5 \div 0\cdot61534$.
3. What is the yearly interest on 4·250 marks at $3\frac{1}{2}$ per cent. ?
4. What interest should we derive from 2745 marks at 4 per cent. per annum from the 3rd of March till the 28th December ?
5. What percentage of 928 marks is 58 marks ?
6. $7\frac{1}{2}$ per cent. of water is mixed with 64 litres of wine. How many litres are there altogether ?
7. An article is bought for 2565 marks and sold at a loss of 8 per cent. What is the loss in marks ?
8. In the preceding exercise, what is the selling price ?

Through the courtesy of the teacher I am able to give the number of sums worked correctly by each pupil and the teacher's estimate of the work.

7 boys had 6 right and were marked "good."					
19	"	4	"	"	"very satisfactory."
2	"	$3\frac{1}{2}$	"	"	"satisfactory."
11	"	$1\frac{1}{2}$	"	"	"poor."

It would furnish an instructive comparison¹ to give these sums to Standard VII. boys in primary schools, and to boys of corresponding age in English secondary schools.

Berlin. — Secondary Modern School. Class II. — Geometry and Algebra. Thirty-four boys present, aged fourteen, fifteen, and sixteen years.

This was the recapitulation of an oral lesson on proportionals. Triangles and polygons were drawn on the blackboard.

There was a marked contrast in the teacher's manner and style of questioning from that noticeable in the primary schools. A rapid, conversational method of speaking was used in place of the slow, clear-cut sentences of the primary teacher.

The questions, moreover, were all of them real questions; they required some effort on the part of the pupil, verbal transmutation of the question was not enough.

I thought that the pupils answered with extreme facility.

The lesson concluded with some rapid algebraical equivalencies worked orally by the scholars. The teacher wrote the following, marked 1, 2, 3, 4, 5, 6, 7, and selected pupils gave a, b, c, d, e, f, g .

$$(1) \quad \sqrt{\frac{x}{y}} = \frac{1}{y} \sqrt{xy} \quad (a)$$

$$(2) \quad \sqrt[3]{\frac{x}{y}} = \frac{1}{y} \sqrt[3]{xy^2} \quad (b)$$

¹ In America the comparison in elementary schools should be made with Grade VIII.

$$(3) \quad \sqrt[7]{\frac{x}{y}} = \frac{1}{y} \sqrt[7]{xy^6} \quad (c)$$

$$(4) \quad \sqrt{\frac{3}{8}} = \frac{1}{4} \sqrt{6} \quad (d)$$

$$(5) \quad \sqrt{\frac{5}{32}} = \frac{1}{8} \sqrt{10} \quad (e)$$

$$(6) \quad \sqrt{\frac{a}{8bc^2d^3}} = \frac{1}{4bcd^2} \sqrt{2abd} \quad (f)$$

$$(7) \quad \frac{a}{b + \sqrt{c}} = \frac{a(b - \sqrt{c})}{b^2 - c} \quad (g)$$

Hamburg.—Secondary Modern School. Class III.*m*.

Thirty boys present, mostly fourteen and fifteen years of age; two were sixteen, and one was seventeen.

The teacher was working a problem on the black-board and the boys were working with him in their exercise books step by step. The problem, taken from the class book, *Arithmetic for Secondary Modern Schools (Realschulen)*, was as follows—

A room of 7 metres in length, 5 metres in breadth, and 3·2 metres high, is to be papered. How many rolls of paper, each 24 metres long and ·43 metres broad, are required?

The following figures were written on the black-board—

Metres. Metres.

$$7 \times 3\cdot2 = 22\cdot4 \text{ sq. metres.}$$

$$5 \times 3\cdot2 = 16\cdot0 \quad ,,$$

$$\underline{38\cdot4}$$

$$38\cdot4 \text{ square metres} \times 2 = 76\cdot8 \text{ square metres.}$$

Metres. Metres.

$$24 \times \cdot43 = 10\cdot32 \text{ square metres.}$$

$$\frac{76\cdot8}{10\cdot32} = 7\cdot4$$

The resulting square measures puzzled the boys, nor, as will be seen from the above, was there any verbal statement to make the figures intelligible.

I asked if the boys could do the next problem in their books unaided. The teacher said that some, naturally not all, could do it, as the class was at the end of the school year, and the boys were taking the most difficult problems, those at the end of the book.

The problem was—

A square courtyard whose length was 18 metres was to be paved for a distance of 2·4 metres from the edges. Each stone was 30 c.m. long and broad. What is the cost, if 100 stones cost 28·20 marks?

The teacher preferred to explain the problem and a boy drew the courtyard on the board, and marked it out in four sections.

The sum was worked as follows—

$$18 \times 2\cdot4 =$$

$$\{18 - 2(2\cdot4)\} = 13\cdot2 \times 2\cdot4$$

$$2\cdot4(18 + 13\cdot2)$$

$$2\cdot4(31\cdot2) = 74\cdot88$$

$$\text{Content } 74\cdot88 \times 2 = 149\cdot76$$

$$\cdot3 \times \cdot3 = \cdot09 \text{ metres squared.}$$

The boys were not very ready, and the teacher again pointed out how difficult these exercises were.

The problem was unfinished, as the time for the interval had arrived.

CHAPTER XI

READING, SPELLING, WRITING, AND COMPOSITION

Leipsic.—Primary School. Class VIII.*b*.—Reading.
Girls, six and seven years old.

These children had entered school only a few months before, and their reading book contained pictures; this, I was told, was peculiar to Leipsic.

The lesson was on the words *Die Larve ist von Pappe* (The mask is of paste-board), and *Larve* was the new word.

A picture was drawn on the blackboard which was also in the books.



Then cards were produced each having one or more letters on it, thus—

ie

was on one card, and

st

on another.

The letters were sounded, and the cards bearing them placed one before the other, in the way common to all phonic methods.

The teachers find the same difficulty as our teachers

in trying to sound consonants without vowels, but they get approximations and build up the words as well as they can.

Frankfort.—Primary School. Class VII.—*Schreib-lesen*. Mixed method of Reading and Writing. Fifty-four girls, aged six and seven, were present under a woman teacher.

ei shown on a card.

Teacher. What is this ?
The sound name was given.

n shown on a card.

Teacher. What is this ?
The sound name was given.

ei n were placed by the teacher thus.

Teacher. Sound this.

Here is another n

Place it in front, so—

n ei n

Sound this now.

Here is another letter

h

Sound this.

Now another

a

Place these together, thus—

h

a

Sound this ;

and thus

a

h

Sound this.

Now make the letter

n

tracing it in the air.

Then the teacher called out “up,” “down,” “up,” “down,” as each separate motion was made.

The children trace the letters in the air. Only the Gothic letters are printed on the cards, and there is no attempt to print these on the slates, as they are too difficult. The Italian alphabets are not learnt till the third year, but the children begin at once with the German script. Careful examination and analysis are needed to detect errors in writing which is relatively unfamiliar, but the utmost scrutiny leads to a conviction that German writing in primary schools is distinctly better than our own, though the German child has two script alphabets to our one. And the result is the more remarkable from the fact that there is no preliminary training in infant schools, as there is with us.

It is interesting to note that the Germans, in their mixed method of reading-writing, adopt in practice the reinforcement of one memory by another, which the psychologist so constantly recommends. Auditory, visual and motor memories are all employed, and that, too, in immediate conjunction with one another.

Leipsic.—Primary School. Class VII.—Reading.
Forty-six present, seven to eight years old.¹

I heard the reading in this class and it was exceedingly well done; the reading matter is, however, more limited than ours, and the children may have been remembering the lesson and not reading it, a practice by no means unknown here. The children are taught first on the phonic method, I am told; they learn the powers of the letters; but in the next class they learn the names, because they have then to do dictation, and this they cannot do, it is said, on a phonic method. The children, when reading, are called upon later to spell words they do not know, and sometimes spell simultaneously. There is one reading book for Class VII. and one for Class VIII. The teacher, who knew English, was surprised that we tried, in some cases, to teach English reading phonetically; she pointed out difficulties in German from the phonetic point of view which I, as my German was very recent, heartily acknowledged, and went on to argue that if a phonetic method had its limitations in German, what must its limitations be in English!

Leipsic.—Higher Primary School. Class III.*a*.—Reading or literature. Thirty girls were present. Official age, eleven to twelve years.

The children had before them a humorous piece of poetry which contained reference to Sedan.

Des Deutschen Knaben Tischgebet (by Gerok).

The teacher read through the poem in a dramatic way, and then gave information about Sedan, the date, the numbers of troops engaged, the leaders on both sides, the position of the contending armies, and the issue of the fight. He described the Napoleonic medal with its *Finis Germaniæ* on one side and *Napoleon III. Imperator* on the other. The teacher was excited and enthusiastic and a little bitter against France; this latter was in marked contrast to the sober, measured tone in which I had heard France referred to in Frankfort. The description of the battle was not accompanied by a plan or pictures.

Then the children read the poem and were subsequently questioned on the meaning of isolated words, *e.g.*:—

What is *Jubeltag*?

Why do we say *am Draht*?

Then a reference to Victoria led to—

Who is Victoria?

Is she alive now?

Who is monarch now?

The answer was *Eduard der Dicke* (Edward the Stout), and the children laughed heartily; the teacher said, because I was there; and I noted this, because such exhibitions of sentiment at the expense of

England were so rare that I had difficulty in believing even in this very mild joke.

The lesson finished with *Die Wacht am Rhein*, sung lustily by the whole class.

This teacher told me that the children work through *the* reading book very thoroughly, and that, after this reading and explanation, they would learn the poem (about forty-five lines) at home within a week.

More lecturing was noticeable in this class than is usual in Germany; the teacher was a university man who had not passed through a training college.

Frankfort.—Middle School. Class I.—Reading.
Ages, thirteen to fourteen.

One of Schiller's dramas is read every year. The children are able to tell a story which they have studied (not learnt by rote), in long, well-connected sentences.

One hundred and sixty lines of poetry were learnt last year, and this year, so far, *Das Lied von der Glocke*, over 300 lines. These were not very well known, and the intonation and style were too similar throughout, though the articulation and declamation were excellent.

Leipsic.—Primary Schools. Reading.

The upper classes in the Leipsic primary schools do not, as ours so often do, entirely neglect the classics of their own language. The first class boys and girls were reading Lessing's *Minna von Barnhelm*; the second class boys and girls were reading

Schiller's *Wilhelm Tell*. It is thought better in the closing classes to read some good home literature than to learn a little of a foreign language, which, in the enormous majority of cases, would be discontinued after the age of fourteen. No ordinary primary school attempts a foreign language, though this is done in the higher elementary schools.

The official method of giving reading lessons in upper classes was thus explained to me :—

1. A sentence is read.
2. Unknown words are explained.
3. The leading ideas are dwelt upon.
4. A grammar exercise on some suitable sentence is given.
5. The difficult words are spelt.
6. An extract is given in the next dictation lesson.

It was interesting to see the invariable reference to the children's atlases when any geographical allusion occurred.

The children here, as often elsewhere, answered by turns round the class. One of the teachers explained that, in this way, every child got a question. He did not seem to feel our difficulty in that matter, namely, that the child too often attends to his own question and not to the others. In his class, which was under excellent control, there was, I think, little danger ; and the lesson was here, a practice not seen by me elsewhere in Germany, enlivened by the alternation of question and answer, one child asking the question and the next answering. Both question and answer were required to be in perfect grammatical form.

Hamburg.—Primary School. Class I.*a*.—Literature and recitation. Fifty-two girls were present, aged twelve, thirteen, and fourteen.

The room, as is often the case in the older buildings in Germany, was small ; and on the flat floor the girls in the long desks of the back rows were not easily seen. But this school, though old in building, was one in which discipline and work were highly praised by the inspector. The first class girls were, many of them, in the German phrase, “very ripe,” and this was certainly characteristic of German school girls of this age.

I heard some very good recitation, which, here as elsewhere, formed a very important part of the school work. To an English taste it was, perhaps, a little over-emphasised and declamatory, but every pupil knew it and enjoyed it. There was not nearly so much individuality in the recitation as would have been found in a corresponding English class, but this was, perhaps, a result, in one sense, of the thoroughness of the teaching.

In this class, and throughout Hamburg I was told, a spelling book was in use, and each child had a copy. German spelling can be more regularly dealt with according to rules than English spelling can, but the head master did not adopt a phonetic method. The backbone of his system was dictation ; and, so far as could be seen by the exercise books, the spelling was very good indeed.

Perhaps as many as ten pieces of recitation would be learnt in one year ; but, as the head master remarked, the really important thing was the careful repetition each year of what had been learnt during the preceding

years, so that, when the pupils left school, they had acquired a little store of good literature to draw upon.

Hamburg.—Primary School. Class V.—Spelling. Fifty-seven children were present, of eight, nine, and ten years of age, the great bulk being nine.

Some words were placed on the blackboard, *e.g.* :—

“Schränk.”

“Schule.”

“Kalender.”

Teacher. How many vowels are there in the first word?

How many in the second word?

How many syllables are there in these words?

What does a word consist of?

Pupil. A word consists of one or more syllables.

Teacher. Spell the above words in syllables.

This oral work is interesting to listen to; but accurate spelling is not acquired by the facility to answer questions of this kind; so that I asked for the method by which spelling was taught, not the method by which it was exhibited. The head teacher said that he used two methods, a phonetic one and an alphabetic one. In the lowest classes, only phonetic spelling was attempted, but in the third school year, when dictation was required, alphabetic spelling became necessary.

Hamburg.—Primary School. Class V.—Spelling, Writing, and Dictation. Girls. The majority of the pupils were eight and nine, two were ten years old.

An examination in writing and spelling had been

given in the previous spelling lesson. The piece set had been constructed from the exercises in a spelling book in use in the class. The passage was written between double lines in German script. The papers had been corrected by the teacher, *all* mistakes, *e.g.*, want of capital letters and omission of stops, being most carefully marked.

The following were the sentences which had been given for the examination in dictation :—

“Die Israeliten murrten wider Gott. Der Priester ging in die Kapelle. Der Held hält einen Spiess in der Hand. Der Offizier schiesst nach dem Ziel. Auf dem Herde stehen ein Theetopf und eine Kaffeekanne. Gieb mir ein Paar Birnen. Manche Käfer sind schädliche Tiere. Vor dem Fenster hängen Gardinen. Mit Speck fängt man Mäuse. Der Bär hat einen dicken Pelz.”

I give a translation, for, as experienced teachers know, the difficulty of the subject-matter, as well as merely orthographical difficulty, has an important bearing on the probable number of mistakes :—

“The Israelites murmured against God. The priest went to the chapel. The hero holds a spear in his hand. The officer shoots at the mark. On the hearth stand a tea-pot and coffee-pot. Give me a couple of pears. Many beetles are noxious creatures. Curtains hang before the window. With bacon one catches mice. The bear has thick fur.”

The difficulty can hardly be correctly estimated except by those who have some knowledge of German spelling, but most of the sentences are simple. The length of the test is, however, very considerable,

and occupies twenty-one lines, or more than two pages of the written papers.

The following were the results :—

1 child	had	1 mistake
7 children	„	2 mistakes
5 „	„	4 „
1 child	„	5 „
6 children	„	6 „
3 „	„	7 „
2 „	„	9 „
2 „	„	10 „
2 „	„	11 „
2 „	„	more than 11 mistakes.

This standard is the first in which spelling is seriously attempted, the purely phonic method of the two lower classes being productive of little result, comparatively speaking.

The above list was called out by the teacher, who was evidently far from satisfied with the result. Nor were the children better pleased, for many of them cried on hearing of their mistakes. The intense interest with which the results were awaited was surprising in such young children.

The teacher proceeded now to individual correction, calling on particular girls to spell the words which they had written wrongly. The words were spelt out, but not written on the blackboard ; here, as often in other lessons, no use was made of visual memory, the auditory memory only being employed.

A careful examination of the exercise books showed that these children in other lessons rarely made more than four mistakes ; but, as the teacher said, that was

no test, since the pieces in the books were prepared just before being written.

Leipsic.—Primary School. Class IV.—Dictation.
Forty children present, nine and ten years old.

This test was one of a weekly series, not consisting of consecutive sentences from the reading book, but specially constructed by the teacher to contain many possibilities of mistakes in spelling and mistakes in grammar. The teacher called out five or six words at a time. These were repeated emphatically by a pupil and then written down by the class. The writing in German script was very slow and careful; beautiful is not too strong a term to apply to it. The children sat up well, but did not hold their pens properly. The same method of holding the pen is taught as with us, and is similarly disregarded. The books bore the marks of the most careful correction; the errors were rewritten at home.

Leipsic.—Primary School. Class V.*a*.—Writing.
Children nine to ten years old.

An inspection of the writing books showed that both the German and Latin script were extremely well written.

The children were then writing the following letters, German script :—



The pieces were numbered, and as the teacher called out "one," the children made the first piece; then

“two,” and they made the second piece ; then the third, then the fourth. If every letter is analysed in this way and written, at first, piece by piece, it does much to explain the excellence of the German school writing.

The great error was leaving too much space between the two down strokes,—the adult reader can verify the tendency by making this letter himself—and this, with other less common mistakes, was corrected on the board. I was again impressed with the good writing of young children, and, when we remember that there are no municipal infant schools, we have cause to ponder. The first notion, that infant school writing—we are now speaking of the four and five year old children—has no value as a preliminary training, is probably the wrong one. I incline rather to the notion that the analysis of the letters is more attended to than with us when the children enter the senior schools, and that this explains their superiority ; but I am not sure that this constitutes the whole explanation.

Hamburg.—Primary School. Writing.

In a girls' school in Hamburg the writing was beautiful throughout. It is not easy to estimate the quality of writing with which one is not well acquainted, and one easily overestimates the quality of the German script ; but the conditions of comparison are satisfied by the Italian script, which both countries use ; and I think that one who is well acquainted with the writing of English and German schools would assign the palm to the latter.

Leipsic.—Primary School. Class VII.—Composition.
Second School Year. Children seven and eight years old.

The object lessons are made the basis of little exercises in written composition. In this class, however, the sentences are copied from the blackboard, so that there is no composition, strictly speaking. In the class above, the children rewrite at home what they can remember of the sentences formed in class.

The following specimen in their exercise books was the composition for August 26, 1902:—

The Goat.—1st Exercise

The goat is a tame animal. It is also called *Geis*. The young goats are called *Zicklein*. The male goat is called he-goat. It lives in the stable.

2nd Exercise

The goat has a slender form. It is covered with long, rough hair. It has a beard and horns. The goat has divided hoofs and chews the cud. It gives us milk, cheese, meat, and leather.

Leipsic.—Higher Elementary School. Class IV.—Composition. Girls, aged ten to eleven years.

The lesson began with a “declamation”—*Die Kapelle*, by Ludwig Uhland.

The teacher picked out the hard words from the next section to be read, and wrote them on the blackboard. The selection is interesting as showing which

words presented difficulty to children of this age and social upbringing. They were—

“Eroberungen.”

“Markgrafen.”

“Vorgänger.”

“Dienstleute.”

“Benutzung.”

“Strafzügen.”

“Räuberbanden.”

The recitation was extremely good, and not in this case, as so frequently in Germany, over declamatory. The perfect discipline and extremely quiet voice of the teacher may have accounted for this.

Then followed the composition.

It was called *Das Gewitter*, which was the title of a poem previously read.

The teacher asked a series of questions, the answers to which formed a fairly connected narrative. The answers were as follow :—

The Storm

Before the storm the air is cool and the sky is black. A few heavy drops fall from the sky. Now it rains more and more. The birds fly to their nests. The traveller hastens home. The fisher sets his sails for home. The mother looks out of the window. The grandmother prays that no harm may come to her dear ones.

Then the children went through the little narrative again orally; and afterwards took down a few leading words from the teacher, preparatory to writing out the composition in full at home.

CHAPTER XII

HISTORY

Frankfort.—Primary School

History begins in the fourth year of school life, when the children are from nine to ten years old.

Lesson on the Thirty Years' War.

(Class III. Boys, ten to eleven years old.)

Teacher. When did the war begin ?

When did it end ?

Whom was it between ?

What kind of a war was it ?

What religion was the Kaiser ?

In what countries was the fighting ?

Who had the larger army ?

Who were beaten ?

What religion were the people compelled to follow ?

I give the questions which indicate the outline and, in some measure, the scope of the lesson, or rather, perhaps, what was aimed at in the way of permanent acquisition.

Berlin.—Primary School. Class II. Seventh School Year. Thirty-two girls present. Nine were eleven years old ; fourteen were twelve years old ; seven were thirteen years old ; two were fourteen years old.

Most of the children in this class had history books which they had bought, and which they always carried with them ; but the purchase of the history book was not obligatory.

The lesson opened with a series of questions on the dates of the important events dealt with in the preceding lesson.

The leading points in the lesson proceeding were :—

Könige aus dem Fränkischen Hause. (Kings of the Franconian House.)

Konrad's Wahl. (Konrad's choice.)

Heinrich im Kampf mit den Sachsen. (Henry at war with the Saxons.)

Der Sieg des Königs. (The king's victory.)

Gregor VII. (Gregory VII.)

Heinrich IV. im Kampfe mit Gregor. (The contest of Henry IV. with Gregory.)

Canossa.

The attention was excellent, and the subject-matter very clearly apprehended. No information was given without being immediately questioned upon, and toward the close of the lesson individual children stood up and gave oral accounts of various sections of it. I inquired how far this power was general, and the

teacher said that the best could do it, but not all. The number was certainly larger than we should find at home in a similarly constituted class, since only in rare instances with us is the power of connected oral expression cultivated.

Leipsic.—Primary School. Class II.*b*. Thirty-two boys present, twelve to thirteen years of age.

Lesson on the Interregnum.

The teacher questioned :—

What does Interregnum mean ?

Between which governments did this exist ?

How long did it last ? (Answered with dates.)

Boys were then called upon to repeat individually—

“The Interregnum lasted ——— years, between ——— A.D. and ——— A.D.”

Then followed questions on Conrad III. and Frederic Barbarossa.

When any boy failed to answer properly he was called upon to repeat the first accurate answer that was given. The discipline and attention were excellent, as was nearly always the case during the actual giving of oral lessons. Many answers were refused, not for inaccurate history but for poor statement. “Nicht Deutsch,” said the teacher, and passed to another boy. In all lessons in this school the same rigorous demand was made that answers should be given in complete sentences of accurate German. I noted here that a few boys were called upon for rather a large number of answers, but that, doubtless, was

due to a desire to show the class at its best, and was not part of the ordinary method of questioning.

Leipsic.—Primary School. Class I.a. Girls.

The history lesson commenced with a reference to Sedan Day, which had just been celebrated; then passed backwards to 1789 and the reasons for the French Revolution. The state of the French peasantry was described, and a comparison instituted with that of the German peasantry of the same date.

Rapidly, the teacher passed to 1870 and the reasons for the Franco-German War. Then, by the usual machinery of question and answer, a very short account of the progress of the war was obtained, of the surrender of Napoleon III., and the siege of Paris, 1871. I was not quite clear how the passage was made from this to the Battle of Leipsic, 1813, but I think through the ancestry of Napoleon and the site of this famous battle, of which the Saxons are duly proud. The history of Napoleon I. was well known in outline. The children told that he—

1. Was born in Corsica.
2. Went to study in France.
3. Was very industrious.
4. Was made a French general (date given).
5. Conducted the Italian campaign.

On section 5 the teacher had to take up the story, but, a little later, the children seemed quite at home again, and concluded the account in a highly creditable manner, the flight from Moscow, and the events

at Elba, Waterloo, and St. Helena being correctly referred to and dated.

The work was purely oral ; there were no sketches, no plans, and no maps ; nor could I gather that connected accounts were ever written in school, though, doubtless, the career of Napoleon would form a subject for a composition exercise at home.

I was impressed here, as elsewhere, with the very considerable mastery of facts in history, which was certainly superior to any but the best work in our own schools in this respect.

The German teachers do not hold that their object is merely to stimulate interest in this subject, but to give a firm basis of sound elementary information. Perhaps that is also the best way to stimulate interest, but as I am not now writing on the relation between information, method, and interest, I am unable to do more than make a passing suggestion.

Frankfort.—Higher Primary (Middle School). Class I.*b*. Forty-eight pupils, aged thirteen and fourteen.

Charles the Great

Teacher.—When did he reign ?

Give the dates.

Who was his father ?

What sort of a boy was he ?

Describe his figure as a man.

What was his character ?

What did he do in war ?

What did he do in peace ?

The above is a series of typical questions. The boys answered readily and gave well-connected oral answers. The lesson closed with a few notes dictated by the teacher and copied by the pupils in small note books. I inquired when and how they acquired the facts with which they seemed so familiar. These were not learned from history books, but from the teacher's oral exposition and the small note books.

Hamburg.—Primary School. *Selecta* (a class beyond the standards). Thirty-two boys present, mostly fourteen years of age.

The teacher began with the usual stereotyped question and answer method, and the date of every event asked for was given.

Then followed some slow, careful, and impressive oral teaching, during which eight additional dates were given. This section was reviewed by questioning, and the teacher, having finished his recapitulatory section, gave what was really an impassioned lecture on *Die Burschenschaft . . . Reaktion und Metternich*. (The Students' League — Reaction and Metternich.) There was little attempt to bring the conceptions down to the children's level. Abstract terms were very freely used. "Unity," "Freedom" were made the subject of a long discourse, and the political notions involved were really beyond most of the pupils, I should suppose. The attention throughout the school was wonderfully keen, but even these boys got restless after twenty-eight minutes of continued narration without a question. It was an admirable

historical lecture; the teacher used no notes, he "loved" history, as his rector said, and was, I think, carried away by his enthusiasm; in any case, this lecture was quite foreign to ordinary German primary school methods. But, towards the close of the lesson, the primary method reasserted itself, and the boys, in rapid but good writing (ten lines in five minutes), took down three sentences to memorise.

The sentences were:

"Die Karlsbader Beschlüsse.

"1. Alle Zeitschriften und alle Bücher unter 20 Bogen sind der Zensur unterworfen.

"2. In Mainz wird eine Zentral-Untersuchungskommission zur Unterdrückung demagogischer Umtriebe eingesetzt.

"3. Die Burschenschaften und Turn-anstalten werden verboten und die Universitäten unter die Aufsicht von Regierungsbevollmächtigten gestellt."

They may be rendered into English as follows:—

The Carlsbad Decrees

1. All newspapers and all books of less than twenty sheets are subject to censorship.

2. In Mayence a central board of investigation is established for the suppression of democratic movements.

3. Student societies and gymnastic clubs are forbidden, and the universities are placed under the supervision of government officials with plenary powers.

"These points," said the teacher, "enable the boys to see what we were, and," with pardonable pride, he added, "what we are now."

Hamburg.—Higher Modern School. *Prima* (lower section). Four pupils were sixteen years old, one was seventeen, two were eighteen, one was twenty.

The lesson was on the history of art, and dealt with mediæval art.

Plans and pictures of mediæval dwelling-houses and churches were abundantly supplied.

The lesson had been prepared at home from a history book on the Middle Ages and Times of the Reformation.

The teacher talked much more than a primary teacher would have done, and each boy was subjected to continuous questioning, lasting in one case for fifteen minutes. The class were not all present, as some of the pupils were taking an examination in mathematics, and this may have accounted for the protracted individual questioning. The lesson afforded an indication of the serious way in which history is regarded and the extent of the field which is covered in this subject in the German secondary school.

Berlin.—Secondary Modern School. Class I. Official age, sixteen and seventeen years. Twenty boys were present.

A map of Europe in the eighteenth century hung before the class. The teacher was seated at his desk

with open books and maps before him. He was questioning on the lesson which had been prepared at home. There were two books used in preparation, one a large history book full of facts and dates, and a small book, a kind of analysis, resembling a very full edition of Mr. Curtis's date book.

Student after student received his oral question, stood up, and gave his answer. The questions were readily answered, but I was surprised that the oral method was applied to these big fellows as if they were boys in elementary schools.

The first section of the lesson, the revision of home work, was completed, and then the teacher began to break new ground.

All the books were opened ; every boy had his own map and two history books, the big one and the analysis above referred to.

They were studying the period 1750-1760. The lesson by the teacher consisted of an amplification in narrative form of those parts of the lesson on which he wished to lay emphasis. This narrative continued for twenty minutes, without a break, without a question, and without a reference to the map. I lay stress on this as marking a profound difference between the primary and secondary teacher ; the first avoids connected narration, the second uses it a good deal, without the necessary safeguards. I venture to suggest that, at least in our country, such wide divergence in method would neither be necessary nor advisable. The lesson closed with an injunction to prepare at home the section lectured on, in time for the next history lesson.

Leipsic.—Primary Schools.

History is commenced in the third school year, when the pupils are eight and nine years of age.

The following is the syllabus in outline :—

Class VI. Third school year. Ages eight and nine.

History of Leipsic.

Class V. Fourth school year. Ages nine and ten.

History of Saxony.

Class IV. Fifth school year. Ages ten and eleven.

Leading points in the History of Germany.

Class III. Sixth school year. Ages eleven and twelve. Short selections from Greek, Roman, and Assyrian history. Old German history to Charlemagne.

Class II. Seventh school year. Ages twelve and thirteen. History to the Thirty Years' War.

Class I. Eighth school year. Ages thirteen and fourteen. History of Brandenburg. German history to the present time.

The teachers commence with history pictures. The children have no history books, but, in the higher classes, short notes, with dates, are dictated at the end of each lesson, and these notes are learnt by the children at home. The teacher speaks for two or three minutes and then questions on what he has said, using a separate question for each important point. Then one or two of the children repeat the whole orally and the teacher again proceeds.

The method in vogue aims at the avoidance of lecturing, and secures it; but some teachers think

that connected accounts by the teacher would leave stronger impressions, though they would be less reproducible. I incline myself to the view that, for children and young students, lecturing is one of the worst forms of teaching, and we have much to learn on this point from the Germans, especially from their primary teachers.

A very disputed point in English educational circles is as to the wisdom or otherwise of introducing lessons from ancient history, for so much, in this case, depends upon the amount which can be done. I am told that German children of eleven to twelve years of age would be expected to know something about the wars between the Greeks and the Persians, with the names of the generals, and the names, places, and dates of the battles. There would be lessons also on Themistocles, Aristides, Socrates, and Pausanias. I was not fortunate enough to hear any of these lessons in process of delivery. Most interesting and valuable information would be furnished by a leaving examination list on such a subject, but no such information is available. One teacher said the boys "had the right of forgetting." No doubt that right is exercised in Germany as in England, but the important questions are, How much is left? and How are the simple historical judgments of the pupils subsequently affected?

In our country there is debate also as to whether young children should, or should not, learn dates in connection with their history lessons. It is argued, and rightly, that a kind of historical plan, which would enable one to locate the whereabouts of events

in relation to each other, is superior, for young students, to the power of definitely locating events by means of dates. But experience seems to show that, without some dates, exactly known, about which events may cluster, the vaguer chronological scheme drops into confusion. The Germans are fully alive to this, and, at the end of the section in the Leipsic *Lehrplan* dealing with history, some sixty or seventy important dates are given, which the pupils are expected to learn. To us this number seems excessive ; but we must remember that history has long been compulsory in German schools, and that, in English primary schools, the subject was, until a few years ago, practically non-existent. Here and there, a few teachers taught it ; but now, history, in some form or other, if only in the perusal of historical readers, is compulsory. Two hours a week in Germany are given to the subject, and this is in considerable excess of the time in England, even in most of the best-equipped town schools.

No history books are used in Leipsic. The reading book contains much history, and also, as a teacher said with pride, "extracts from our great poets and great authors." This reading book consists of four parts, one part lasting two years. The children carry these books with them in the large satchels which are so characteristic of the German schoolboy's appearance.

But a change of opinion is in progress on the subject of history books. They are this year (1902) being used in Frankfort in primary schools, though they were formerly forbidden. As in Leipsic, the books are purchased and kept by the pupils in their satchels.

CHAPTER XIII

GEOGRAPHY

Leipsic.—Primary School. Class VI.*b*. Forty girls, nine and ten years of age.

A Lesson on the Town Schools

Teacher. Which was the first school in this town ?
What part of the town is it in ?
What streets must you pass along from
here in order to get to it ?
What other name has this school ?
How many schools are there of this name ?
Where does the new one stand ?
What church is it near ?

The answers given were required to be in complete sentences, and correct grammatical form was insisted on ; but the number of children who seemed able to answer was small.

At this point the teacher began a continuous statement, of which the following were the chief points :—

Formerly the people could not read or write. There were two schools only ; in these they taught Latin. Then there were schools in which reading, writing, and arithmetic were taught, but not geography, history, singing, or drill. There were often more than one hundred children in one small room ; the teachers

were not taught to teach, and the children did not learn much.

Then followed a review of these statements by the usual method of question and answer. A concluding section gave more information by the teacher, and dealt with the first public school opened in the town, its situation, and how one could reach it; that it was only for the children of the poor; that then the first citizen school was built; and that now there were thirty schools where the children paid 4 marks 50, fourteen schools where 18 marks were paid, and four schools where 36 marks were paid annually.

No plans or drawings were referred to.

This class of young girls was under admirable control, and the pupils were, as usual in Germany, perfectly attentive to the oral teaching; but my own feeling was that such a lesson would have been more suitable to older children. Town geography, though nearer in space to the children, is not so near to them in sentiment and thought as the geography of natural objects.

Berlin.—Primary School. Class III.—Geography.

The ages of the children in this class were eleven, twelve, and thirteen.

When the rector entered the class-room with me the scholars were occupied in writing out geography notes in their exercise books. He requested the teacher to stop this and to review the last lessons. I give a summary of the principal points touched upon. No question in the teaching of geography is more

debated among our own teachers than how much shall be attempted ; and what is actually learnt in another country cannot therefore fail to be interesting.

Teacher. Name some of the principal towns in the German Empire.

Bremen, Hamburg, and Berlin were given.

Teacher. Give the population and position of each of these.

The mention of Berlin led to the kingdoms in the German Empire.

Teacher. How many kingdoms are there ?

Which is the largest ?

Which is the smallest ?

Pupil. Saxony is the smallest.

Teacher. Describe it.

A selected pupil then gave a few sentences about Saxony, and the teacher proceeded to ask for the rivers of Saxony, then the mountains, and finally the towns.

Teacher. What do you know about Dresden ?

Pupil. Dresden is the capital of Saxony.

Teacher. What can you say of Leipsic ?

Pupil. Leipsic is the largest town.

Leipsic has a famous "Fair."

Leipsic contains the Supreme Law Courts of Germany.

Leipsic has a great book-meeting.¹

Leipsic has a university.

¹ This refers to a meeting at Leipsic of publishers' representatives, who, it would scarcely be an exaggeration to say, come from all over the world.

Three smaller manufacturing towns in Saxony were mentioned, and a question about the Saxons obtained the answer, "The Saxons are a brave and industrious people."

The Germans, be it noted, do not disdain to use their schools to overcome local animosities.

Teacher. Who is King of Saxony ?

Then a similar series of questions and answers dealt with Bavaria. The answers were ready, and it seemed that every boy knew them, as far as an oral examination can give evidence of this. The teacher's voice was pitched low, and the attention was very good indeed.

Berlin.—Primary School. Class II. Seventh School Year. Official age, twelve to thirteen. Forty-four boys present ; only one boy on the register absent.

The pupils here had no geography books ; but every boy had an atlas, which was clear and uncrowded. For geographical information which the map did not provide the scholars were entirely dependent upon the oral lessons of the teacher, supplemented by such notes as he was able to give them. To prepare the geography of a country at home meant chiefly to study the map. The German boy's power of description from a map is quite astonishing to one accustomed to English boys ; but sketch maps are not drawn by him in school. I thought that drawing would have led to a better understanding of a map

than verbal description, for words are singularly inadequate when definite and individual space relations are in question; but German teachers appear to think otherwise.

The lesson opened with a "repetition" of the work done in the home lesson, which happened to be the geography of Spain and Italy.

The usual question and answer method obtained, and the teacher questioned on—

1. Mountains, names and situation;
2. Rivers, names, direction, and situation;
3. Towns, with their situation and the reason of their importance.

The lesson had been moderately well prepared, but the answers contained several bad shots, particularly where position was concerned. The question, for example, "Which towns are on the Ebro?" obtained many towns in answer, but not on the Ebro. The map had, doubtless, been most attentively looked at, but a rough sketch once or twice would have vastly added to the memory of position. (I suggest the exact statistical determination of this improvement to investigators in pedagogical psychology.)

More than one report on German geographical teaching led me to expect a linking up of the geographical facts so as to show the dependence of one set upon another, and I listened closely for illustrations of this method. But I heard few, if any. No doubt there are such lessons given, but those I heard were the ordinary lessons of the school, and were not given for exhibition purposes.

Certainly in this lesson there were no such bonds of connection instituted. No pictures were used, nor any blackboard sketch, and the questioning now ranged over all Europe. The following are some of the topics touched upon :—

The lakes of Sweden ;

The parts and divisions of the Alps ;

The towns of France, especially Marseilles ;

Toledo and its fame, thence to Cordova, thence to Granada with the Alhambra, which was described with the date of building, and thence to Marmora and Carrara.

In this class the questions were asked first and the boy who was to answer was selected afterwards. I mention this because of its divergence from the usual custom, so far as I had hitherto observed.

Frankfort.—Primary School. Class I.*a*.—Geography.

Boys, aged thirteen to fourteen years.

The geography lesson was regularly given by the head teacher.

A large map of the Balkan Peninsula hung before the class.

Teacher. What does the map show ?

Pupils then came out before the class and pointed out boundaries, mountains, rivers, &c.

The noteworthy points were the readiness with which they named the natural features and the connected form into which they threw their statements.

But when, and how, did they learn the names ?

They did not, I was told, learn them from their books, but at the close of each lesson on a new country the most important names, carefully spelt, were entered by the pupils in a little geography note book, and, with the aid of the atlas, which every boy possessed, he prepared himself for repetition at the next school lesson. One boy, who came to the front of the class, was able to continue his information for two or three minutes.

Another boy was unable to proceed without suggestions from the teacher, such as, "What is this river flowing round here?" "Show me the river —." "How is this country divided?"

Meanwhile a boy was drawing a rough coastline on the blackboard. This, however, was not used, and another boy drew a sketch map of the mountains and rivers only.

More descriptions were given from the sketch map by selected boys, thus:—

The river — rises in —, flows in such a direction, and receives the tributary — on its left bank; then making a great bend it passes —, and finally empties itself into — through a delta.

(The account here is much abbreviated.)

A return to the original map was accompanied by questions such as—

Teacher. Name the islands on the west.

Pupil. The islands on the west are called —, —, —.

They were, however, not very well known.

Then came some well-answered questions on the rise and spread of Mohammedanism ; and, after this, connected accounts of the history of Constantinople, with dates, and a short description of the Mosque of St. Sophia. A short description of Stamboul followed, and the boys were asked to describe a Turkish house. Only a few tried to respond ; one boy made several attempts, and finally got through very well.

A striking contrast with English schools was afforded by the readiness with which the pupils gave long oral accounts of things. I timed several of their answers, and found them to extend over two or three minutes.

Another contrast was the extent to which the boys were taught to give oral accounts by means of maps.

There was no instruction in map drawing ; many boys had drawn maps at home and coloured them, but they were exceedingly rough and very few names were inserted. The scholars were accustomed to work with their own atlases before them as well as with the map on the easel ; but the practice of drawing rough sketch maps and filling in, step by step, mountains, rivers, and towns, was not adopted. The head teacher said there was no time to draw maps in school.

The atlases were extremely good. A clear scale in miles and another in kilometres were shown prominently in every map. The mountains were plainly marked, and a few rivers and important towns. They were not encumbered and rendered obscure by much detail, which the children could not possibly require.

Finally, the boys were told to prepare the next lesson from their geography books. These were full and contained much information, nor did I find the same attempt to work it up into little tales as is found in so many English school-books.

Hamburg.—Primary School. Class I. Forty-nine boys were present, thirteen and fourteen years of age.

A large, clear, uncrowded map was hung on an easel, and each boy, with his own atlas before him, as usual in Germany, followed the demonstration on the large class map. The boys have no geography books; the teacher said that any information required, in addition to that supplied by the atlas, was dictated by him toward the close of the lesson, and was copied into the boys' note books and subsequently learnt at home.

The lesson was on the Province of Westphalia and the Rhine Province of Prussia.

A short summary of physical features was given by the usual question and answer method, and the towns of Münster, Cologne, Bonn, Düsseldorf, Wesel, Coblenz, and Aachen were located, and a short account given of the importance of each. The point of interest lies in the fact that a review and amplification of German geography is given toward the close of the boys' school life. With us, too commonly, England is dealt with in Standard III., when the boys are nine or ten years of age, and very often receives no further attention; so that it is not uncommon to find that boys, on

leaving school, have a fair knowledge, say, of Asia and America, and hardly any at all of the British Isles. A repetition of the geography of the British Isles and England's colonies would fittingly form part of the syllabus for our own Standard VII.

Berlin.—Secondary Modern School. Class VI.*m*.

Thirty-eight boys were present, of ten, eleven, and twelve years of age.

A good, clear, physical map of North America was suspended before the class, and, in addition, each boy had his open atlas before him.

The discovery of North America and the general physical features were first discussed, and much emphasis was laid on the recent volcanic eruption, which the teacher described fully.

Comparisons were instituted between certain features of the country and those of Brandenburg, the province in which Berlin is situated.

Then the surrounding waters were named, and the course of the Gulf Stream traced by the teacher. Borne on the Gulf Stream we reached Great Britain, its short green grass and its cricket and football.

The teacher had not the constant fear of lecturing before his eyes, as a primary teacher would have had; and frequently gave long, connected accounts of things. Nor was the information given thoroughly questioned upon at once, as is the practice in primary schools. But the map was similarly the basis of the instruction, and map-reading formed a large part of the lesson.

Berlin.—Secondary Modern School. Class III.

Forty-four boys were present, thirteen and fourteen years of age.

A large map of China was placed before the class, and each boy had his own atlas lying open with the map of China before him. As usual, the lesson consisted largely of "reading the map."

The pupils, in answers to questions, gave the parts of China, the islands lying off its coasts, and then its promontories. Then, with two maps before them, China and Germany, comparisons were instituted as to size, shape, plains, tablelands, and water-supply. Both maps were shaded to show elevations of surface. Brief answers were obtained as to the productions and exports of China, and the names and situation of its large towns.

Then the rivers were dealt with, some four or five were named, and the extent of their navigability was a prominent feature in their description.

There were few railways for fear of foreigners, and the necessity for canals was insisted on.

The boys, I found, had books at home, but the teacher said they learnt principally from the maps in their atlases. Map drawing does not seem to form part of their regular course, though I gathered that they could draw the map of Germany. The lesson closed with a rough sketch map of the Rhine by the teacher and questions as to lakes, tributaries, and towns connected with it.

The oral answering in this section of the lesson was

enthusiastic and accurate, and the teacher alluded to the keeping up of back work ; for this subject, as he said, was part of the syllabus for Class V., and had been first dealt with two years ago. The power to make connected narrative from map-reading was developed to an extent unknown in England, though I did not find that there was much realisation of the connection between the various geographical phenomena.

Hamburg.—Secondary Modern School. Class II.

Thirty-one boys were present. Official age, fifteen years.

A large and clear relief map of the Rhine was hung before the class. Each boy had an atlas, but the atlases were closed. One boy traced the course of the river on the map, and other boys gave oral descriptions as he went along. The Rhine rises in such a place, flows in such a direction, passing through such a country, and so on. Then came a series of questions by the teacher which were answered in the usual fluent German manner.

The points questioned on were the extent of the upper, middle, and lower Rhine, the tributaries of the upper Rhine on the left bank, on the right bank, the lakes connected with it, and the towns on the banks. Then the Rhine was compared with the Danube as to navigability, and then with the Doubs and Saone, which flow into the Rhone ; the towns and tributaries farther north were dealt with ; the canals which connect the Rhine with other rivers, and the towns

which were thereby rendered accessible ; and, finally, the mountains which surrounded the Rhine basin.

As I have said, the boys were ready and fluent, and answered in good German sentences. The geography books contained some good sections of the surface, cut in different directions,—a matter too much neglected in our own text-books.

There were exercise books containing maps, but these were of the highly coloured variety and were done at home. The teacher said he did not draw maps on the blackboard, as the discipline suffered ; and it was not his practice to let the boys draw their own sketch maps as the lesson proceeded. I thought that verbal description when mere topography was concerned was probably inferior to drawing, either for memory or understanding.

Leipsic.—Primary Schools

The following outline scheme is based on the *Lehrplan* for Leipsic. Geography lessons proper begin at nine years of age, and successively treat of—

Saxony in the fifth class,
Germany in the fourth class,
Europe in the third class,
The World in the second class,
Smaller and Greater Germany in the first class.

The shape of the earth, its movements in relation to the sun, and the moon's movements round the earth are dealt with in Class IV., in which the pupils are ten and eleven years of age. The tendency is to

postpone astronomical geography to a later period of school life.

A Berlin teacher, who had given much attention to the subject, thought that astronomical geography was better left till after the primary school age.

Frankfort.—Geography (School Journeys)

I saw whole classes of boys from time to time walking through Frankfort in quest of geographical knowledge. I was not much impressed by the reality of this work. It was optional on the part of the teachers, and the weather was hot. The latter may have accounted somewhat for a certain slackness observable, and the occasional halts for exposition and questions did not seem to me very serious affairs. But able German teachers tell me that these school journeys are of high value.

Map-drawing

There was not much drawing of maps of any kind by the scholars. The German primary school boys can read maps very well, but very few would be able to illustrate their geographical answers by sketch maps. It is doubtless unnecessary for any boy to be so well acquainted with the configuration of the world as to be able to sketch any considerable part of it; and, doubtless also, reading maps is more important than drawing them; but any one accustomed to make rough sketch maps of the country he is studying not only obtains a much clearer notion of its geography,

but, even for the purpose merely of reading the authorised map of that country, has gained valuable help. I am not quite clear whether the German indifference to pupils' sketch maps arises from a notion that they are of little value or from the necessary limitations of school time. Geography in primary schools has two hours a week allotted to it, and, on the average, the same time in secondary modern schools. In the latter, all the boys have atlases and the children practise maps at home. They may be called upon to draw these maps in school, but not as a regular part of the school work. The readiness with which they read maps is certainly noteworthy.

CHAPTER XIV

GERMAN GRAMMAR

ONE of the most striking differences which exists between English and German education is the much greater attention which is paid in Germany to the native tongue. In the primary schools of Berlin, eight hours a week in the lowest class, in which the scholars are six and seven years old, are compulsorily given to their own language, and six hours a week are thus given even in the first class, where the pupils are thirteen and fourteen years of age. And in the secondary modern schools of the same town six hours in the lower classes, where the children are ten and eleven years of age, and three hours in the top classes, where the scholars are fifteen, sixteen, and seventeen years old, are compulsorily allotted to German.

Probably the most efficient cause of this is the pride of the German in his national literature and his belief in a well-understood common language as a great bond of national union. Our English primary teachers complain of the debased accent which, in many great towns, has to be overcome. The German primary teacher complains not only of accent but of dialects, and my suggestion that the time might be reduced was invariably met by the protest, that in no shorter time could the scholars be taught to

speak German. "*Nicht Deutsch*" was an objection frequently raised by teachers in my hearing when badly-phrased answers were given, and that, not simply in language lessons, but in *all* lessons. There is continual insistence on correct speech, and this means much in a highly inflected and positional language like German. The little children must answer always in complete sentences, and, indeed, in some schools, such answers were insisted on throughout. Several head teachers thought that the principle was rather overworked, and I thought so too; but it is, at least, an evidence of great care for the language. *Mir* for *mich*, and *den* for *dem*, often brought rebukes which inaccuracy of meaning failed to call forth.

Leipsic.—Primary Schools

In some schools in Germany, the children are allowed to have Grammar books, but not in Leipsic. The teacher must make up his own illustrative sentences or take them from the reading book.

The following scheme is immediately based upon the *Lehrplan*.

1. In the second school year, when the children are seven and eight years of age, they begin grammar by picking out nouns, adjectives, and verbs. They also deal with number.

2. In the third school year, when they are eight and nine years old, little sentences are given which are divided into subject and predicate. The subject must

be a noun or a pronoun ; the predicate must be a verb, or a verb with an adjective or noun as complement.

Nouns and pronouns are dealt with as to gender and person.

Adjectives are compared.

The simpler tenses are dealt with, *e.g.*—

Present tense, *ich gehe.*

Perfect tense, *ich bin gegangen.*

Future tense, *ich werde gehen.*

3. In the fourth school year simple sentences are more fully dealt with.

Nouns and pronouns are declined, number words are dealt with, and voice is added to the treatment of verbs.

4. In the fifth school year simple sentences are more fully treated—the adverbial extension is introduced, with adverbs and prepositions.

Additional tenses are taken in the parsing of verbs, *e.g.*—

Imperfect, *ich ging.*

Pluperfect, *ich war gegangen.*

Future perfect, *ich werde gegangen sein.*

The variations of the declination of nouns, articles, and adjectives are now dealt with. Interrogative and relative pronouns are added. Pronouns are fully declined.

5. In the sixth school year, when the children are eleven and twelve years old, the previous work is recapitulated ; complex sentences are treated ; the conditional mood is dealt with, and also the sub-

junctive; the difference between direct and indirect narration is shown, and conjunctions are introduced.

6. In the seventh school year there is recapitulation, with more difficult complex sentences and elliptical sentences; and the moods of verbs are fully treated.

7. In the eighth and final school year the work is recapitulated again, and compound sentences are introduced. The grammatical difficulties of German writing and spelling receive special attention.

Grammar receives a more important place in the German primary school curriculum than in ours. Our own school code makes grammar compulsory in so far as it relates to the correct use of language. The extreme vagueness of such a conception results in a variety of treatment which offers no very tangible result.

I heard some excellent grammar lessons given, but, as with us, it is not a subject which teachers are, as a rule, fond of teaching. A very unusual power of analysis of thought and of logical treatment is needed to make grammatical teaching really excellent, and the possession of such power is probably not very widely spread in any country.

Perhaps the most noteworthy points from the standpoint of method are:—

1. The treatment of nouns and verbs before the treatment of subject and predicate.

This I believe to be correct, and have argued for such a beginning on theoretical grounds.

2. The treatment of analysis and parsing side by side, progress in one being regulated by progress in

the other. Conditional and subjunctive moods, for example, are not really intelligible, except in connection with complex sentences, though the treatment of indicative and imperative moods may be fitly introduced in simple sentences.

Hamburg. — Primary School. Class V. Third School Year. Fifty-seven girls present, of eight, nine, and ten years of age, the bulk being nine.

Teacher. Which words do we write with capital letters?

Pupil. We write nouns with capital letters.

Teacher. What are nouns?

Pupil. Nouns are the names of persons, animals, and things.

Teacher. Give examples.

Now give examples of masculine nouns only; now of feminine nouns; now of neuter nouns.

Decline "ball" in the singular and plural.

This was done correctly; the article being prefixed and the cases referred to as—

First case,
Second case,
Third case,
Fourth case.

Teacher. Place the words which you have just heard in sentences.

This was done, one sentence being given in which a preposition governed the third case. The question,

"Why is 'ball' in the third case?" suggested by me, did not obtain an answer; and the teacher pointed out that that work came in the syllabus for the next standard. The head teacher, in answer to my question as to whether the children understood the cases, said, "Certainly." Doubtless, when we spoke of understanding the cases we had different things in mind; but, however this may be, no one who knows anything of German grammar would deny praise for the work of this class of young girls.

Berlin.—Primary School. Class IV. Fifth School Year. Official age, ten to eleven years. Four boys were nine, twenty-three boys were ten, nine boys were eleven, five boys were twelve, and six boys were thirteen years old.

A sentence was selected by the teacher from the authorised reading book:—

"Die Sonne spiegelt sich in den unzähligen Wasserstrassen."

"The sun is reflected in the innumerable water-courses."

Teacher. What is the subject?

Pupil. The subject is *Die Sonne*.

Teacher. Having found the subject, what question do you ask so as to find the predicate?

1st Pupil. What does the sun do?

2nd Pupil. *Die Sonne spiegelt sich.*

Teacher. What part of speech is usually the subject?

Pupil. The subject is usually a noun.

Teacher. Whom or what does the sun reflect?

The pupil selected gave the answer to the question "Where," viz. : *In den unzähligen Wasserstrassen.*

This mistake was pointed out by the teacher, and the correct answer subsequently obtained.

Teacher. What remains in this sentence ?

Pupil. *In den unzähligen Wasserstrassen.*

Teacher. What part of the sentence is this ?

The answer was not readily forthcoming, but finally was given correctly.

In this section of the lesson I thought, as I often did, that the analysis was not so well done as by a corresponding class at home ; but this is what we might call the German Fourth Standard, whereas, with us, the analysis of a simple sentence is usually the work of the Fifth Standard.

The next part of the lesson was devoted to accidence.

Teacher. Decline *Sonne* with the definite article.

This was accurately and quickly done.

Teacher. Now decline a masculine noun with the definite article.

Nagel was the noun chosen.

Teacher. Now decline *Der grosse Nagel*.

This was correctly done.

Teacher. Now decline the noun with an adjective and an indefinite article, *e.g., ein grosser Nagel*.

The boys found this very difficult, the teacher's reason being that the boys spoke badly at home. The many changes of inflection which adjectives and articles undergo would soon disappear, I think, if

they were not worked into each successive generation at the public schools. In any case they present great difficulty, as every English student of German knows; and the wonder is, not that the German boys are sometimes wrong, but that they are so often right.

The last section of the lesson was given to tenses.

Starting with *spiegelt*, the pupils gave all the tenses fairly well; and I heard here the process in operation, for the tenses could be given when they were described and illustrated, but not simply when they were named. The boys could not, for example, give the imperfect of *schreiben* until some such sentence as the following assisted them: "What should I say if it happened yesterday?"

This was very interesting, because it showed that the rapidity with which the German boy gives the "forms" of his nouns and verbs, the cases, numbers, and tenses, is not simply a product of a highly-developed rote memory, but a result, in the main, of good inductive teaching.

Berlin. Class IV. Fifth School Year. Forty-six boys were present; official age, ten and eleven years.

I had, in passing from one room to another, remarked to the rector on the readiness with which the German boys answered questions on the accidence, and he, whilst deprecating any general praise, said that he could show me some really first-rate work of this kind.

The teacher started with the infinitive *suchen*. He asked for—

- (a) First person, singular number of the imperfect tense.
- (b) Second person, singular number of the first future tense.
- (c) Third person, singular number of the perfect tense.
- (d) Third person, singular number of the present tense.
- (e) First person, plural number of the imperfect tense.
- (f) Second person, plural number of the pluperfect tense.

The children answered equally well, whether the Latin or German parsing terms were used, and I should have said that over 90 per cent. of the boys were ready with the right answer immediately on the conclusion of the question. This kind of practice obtains but little in England, and to those who doubt its difficulty, I suggest a trial, not only with boys but with educated adults.

The next section of the lesson reversed the process and consisted of "parsing"—a very much easier matter.

Teacher. What form is *suchen* ?

Pupil. *Suchen* is the "name-form."

" " " infinitive.

Teacher. I say *Sie haben gesucht*.

Give the person, number, tense of the verb.

Teacher. Es suchte.

Give person, number, tense, voice.

Teacher. Ihr werdet gesucht haben.

Give person, number, tense.

Teacher. Sie hatten gesucht.

Give person, number, tense.

Teacher. Es sucht.

Give person, number, tense.

Now take *tragen*.

The method of the first section was repeated, except that the passive forms only were asked for. They were admirably and readily given.

An excellent recitation, somewhat too emphatic, perhaps, for our taste, brought this exercise to a close.

Berlin.—Primary School. Class IV.

Official age, ten and eleven.

The following sentence was written on the black-board :—

“Der Horcher an der Wand hört seine eigene Schand.”

“The listener at the wall hears his own shame.”

Teacher. What is the subject ?

Pupil. The subject is *der Horcher*.

Teacher. What kind of listener ?

Pupil. The listener *an der Wand*.

Teacher. What part of speech is *an* ?

Pupil. *An* is a preposition.

Teacher. Give a definition of preposition.

There was difficulty here as there would be at home.

Teacher. What is the predicate ?

Pupil. The predicate is *hört*.

Teacher. What tense is it ?

Now give the past tense.

And now the future tense.

Whom or what does he hear ?

Pupil. He hears *seine eigene Schand*.

Teacher. What case is *Schand* ?

Pupil. *Schand* is accusative case.

Teacher. Must the object be accusative ?

Pupil. No.

Teacher. But it is here. What kind of a verb is *hört* ?

Pupil. *Hört* is a transitive verb.

Teacher. What case follows transitive verbs ?

Pupil. The accusative case follows transitive verbs.

Teacher. Is this always the case ?

Pupil. No, for sometimes transitive verbs are in the passive voice.

Teacher. What verbs do you know which have no passive form ?

The second sentence given was :—

“ *Könnte man jedes Ding zweimal machen.*”

“ Could one (only) do everything twice.”

Teacher. What part of speech is *man* ?

Pupil. *Man* is an indefinite pronoun.

Teacher. What part of speech is *Können* ?

Pupil. *Können* is an auxiliary verb.

Teacher. Give other auxiliary verbs.

Pupil. *Sein, haben, werden.*

Teacher. What is the use of *sein* and *haben* ?

Pupil. *Sein* and *haben* help to form the perfect tense.

Teacher. Give some more auxiliaries.

Pupil. *Können, dürfen, mögen, müssen, sollen, wollen, lassen.*

Teacher. What is the use of each of these auxiliaries ?

This was an extremely difficult question, but some answers were given in each case.

Teacher. What is *zweimal* ?

Pupil. *Zweimal* is a number word.

Teacher. Which kind of number word ?

Pupil. A definite number word.

Teacher. What is the Latin for number word ?

Pupil. The Latin word is *numerales*.

Teacher. What is the German word ?

Pupil. *Zahlwort*.

Teacher. What other Latin number words do you know ?

Pupil. *Cardinales* and *ordinales*.

Teacher. Give examples of these.

This admirable lesson was followed with the greatest interest throughout, and the answering was prompt and accurate.

The class now recited for me *Der Sänger*, by Goethe. It was splendidly done, and I found with astonishment that the boys had learnt ten pieces of considerable length in that one year.

Berlin.—Primary School. Class III. Sixth School Year. Nineteen boys were eleven, sixteen boys were twelve, and eight boys were thirteen years old.

Sentences from the reading book were chosen for exercises in analysis and parsing. The first sentence was :—

“Es war im Winter, und das Eis stand.”

“It was in winter, and the ice stood firm.”

The analysis presented no difficulty, it is obviously easy; and the teacher proceeded to question on the accidence.

Teacher. What tense is *stand*?

Pupil. *Stand* is imperfect tense.

Teacher. Now give the perfect.

What auxiliary do we use?

Give the pluperfect tense.

Now the first future tense.

And the second future tense.

The next sentence chosen was :—

“Da beschlossen die Husumer

Ein grosses Fest zu feiern.”

“Then the people of Husum resolved to celebrate a great festival.”

The predicate was readily selected by all the pupils. Then followed the question—Who or what resolved?

Ans. The people of Husum.

"Now what question shall we ask?" said the teacher.

Ans. Resolved whom or what?

Then a boy asked the question and answered it, "to celebrate" being treated as the first object.

And in answer to a question as to any further object, "a great festival" was given as the second object.

Such questions followed as :—

What kind of *Fest*?

What is the gender, number, case of *Fest*?

What is the rule of agreement of *grosses* with *Fest*?

The work was entirely oral, and the blackboard was not used.

In discussing the order in which analysis should be made, this teacher was very clear as to the advisability of selecting the predicates first.

Frankfort.—Second class girls. Official age, eleven to twelve; but six of the girls were thirteen.

A passage from the book was chosen by the teacher for analysis :—

"Die Störche ziehen im Herbst fort, weil sie im Winter keine Eidechsen bei uns finden würden, und also verhungern müssten."

"Storks migrate in autumn because they would find no lizards in winter among us, and therefore would starve."

Teacher. What is the first sentence ?

Pupil. *Die Störche ziehen im Herbst fort.* (Storks migrate in autumn.)

Teacher. What is the subject ?

What is the predicate ?

Change the subject and predicate into the singular number.

Pupil. *Der Storch zieht fort.*

Teacher. Change the subject into a pronoun.

Pupil. *Er zieht fort.*

The remaining clauses were omitted, and the teacher passed to the next sentence in the book.

“Der ranke und unfreundliche Winter gefällt ihnen überhaupt nicht.”

“The harsh and gloomy winter does not at all please them.”

The analysis followed the same order as before.

The kinds of clauses were not dealt with.

Other sentences were changed from singular to plural, and from plural to singular.

Then followed questions of this kind :—

What number, gender, and case is *Strasse* ?

What is the dative singular of *Das Fenster* ?

What is the dative plural of *Das Fenster* ?

Decline *Schlange* throughout.

The logical analysis was not so readily done as with good classes in English primary schools, but the accidence was very much better known. There were mistakes, e.g. *der* and *den* were often con-

fused ; but the teacher informed me that, in this class, the second, the children were only just beginning to speak German, and that one reason for so large a place in the curriculum being given to it was the corrupt language that the children spoke at home. Yet the primary school in Germany is not a thing of yesterday, and one is tempted to ask—Can schools arrest inflectional decay, and should they do so ?

Frankfort.—Primary School. Class I.*b*. A large class of girls, twelve and thirteen years of age, under a woman teacher. There were no children of fourteen in the school, as they leave at once on attaining that age.

Questions were asked by the teacher as follow—

Teacher. Give me a name ?

Pupil. Anna.

Teacher. What did Anna do ?

Pupil. Anna embroidered.

Teacher. Is this a sentence ?

Pupil. No.

Teacher. Why not ?

Pupil. Because it is not complete.

Teacher. Complete the sentence.

Pupil. Anna embroidered a piece of tapestry.

Teacher. Now put in a qualifying word.

Pupil. The industrious Anna embroidered a piece of tapestry.

Teacher. Introduce another modifying word.

Pupil. The industrious Anna embroidered a piece of tapestry yesterday. (*Die fleissige Anna stickte gestern einen Teppich.*)

Teacher. What kind of a sentence is this ?

Pupil. A simple sentence.

Teacher. What is the subject ? What is the predicate ? &c.

Then questions were asked as to the parts of speech with number, gender, and case of nouns, and voice, mood, and tense of verbs.

This was well done, but any close estimation of work of this kind would require individual written exercises ; and the sentence has almost the simplest possible form. After declining some nouns separately, and then with an adjective, the children were asked to decline in the singular and plural—

“die schlafenden Füchse.”

There were two mistakes and “*den*” for “*der*.” But, when the mistakes were put into sentences of a very simple nature, the children laughed and corrected themselves.

Leipsic.—Primary School. Class I.*a*. Boys, thirteen and fourteen years old.

At my request the teacher placed the following verse on the blackboard—

“Die Luft ist kühl, und es dunkelt,
Und ruhig fließt der Rhein,
Der Gipfel des Berges funkelt
Im Abendsonnenschein.”

(“The air is cool and it grows dark,
And calmly flows the Rhine,
The mountain-top glows
In the evening sunshine.”)

The analysis proceeded in answer to the teacher's questions.

Teacher.—How many sentences are there here ?

Which are they ?

The pupils had very diverse views on these points.

Teacher. What is the subject of the first sentence ?

Pupil. *Die Luft.*

Teacher. What is the predicate ?

Pupil. *Ist.*

Teacher. What is the complement ?

Pupil. *Kühl.*

Teacher. What part of speech is *Kühl* ?

Pupil. *Kühl* is an adjective.

Teacher. What is *es dunkelt* ?

Pupil. That is another sentence.

Teacher. What kind of a sentence ?

What is the next sentence ?

Pupil. *Und ruhig fließt der Rhein.*

Teacher. What is the subject ?

Pupil. *Der Rhein* is the subject.

Teacher. And the predicate ?

Pupil. The predicate is *fließt*.

Teacher. What part of speech is *ruhig* ?

The boys were generally of opinion that *ruhig* was an adjective.

The rector hereupon took up the questioning, and succeeded in showing *ruhig* to be an adverb.

A difficulty in German, which is rare in English, is that the adjective and adverb have the same form.

The teacher now proceeded to the next sentence—

“ *Der Gipfel des Berges funkelt.* ”

Teacher. What is the subject ?

First Pupil. *Des Berges* is the subject.

Second Pupil. *Der Gipfel* is the subject.

Teacher. Give the nominative singular of *des Berges*.

Teacher. What is *des Berges* ?

Pupil. *Des Berges* is the complement of *der Gipfel*.

Teacher. What does *Im Abendsonnenschein* tell us ?
(Four hands up.)

Pupil. It tells us when *der Gipfel des Berges funkelt*.

The rector was dissatisfied with the answering in this lesson and explained that analysis was not specifically the work of this class ; the children had forgotten it, he thought. The point in which I was most interested was the selection of the sentences first. The best English practice, though still rare, selects the finite verbs first, then builds up the individual sentences round these, and deals with the kinds of sentences last. The other method presupposes a rapid mental analysis of the whole matter first, and is certainly not so easy for children nor so conclusive for adults. Some rapid questions and answers on the moods, tenses, persons, and number of common verbs concluded the lesson.

The rector asked these questions, and I noticed the immediate way in which he grasped the work of the class. The *Lehrplan* probably accounts somewhat for this, and the steadiness of the curriculum, which remains unchanged from year to year ; but I am also of opinion that the head teacher is,

more often than with us, the best teacher in the school. He can hardly grow inexpert, as he is bound to take his definite share of teaching with the others.

Berlin. — Secondary Modern School. Class VI.
Thirty-six boys were present, ten, eleven, and twelve years of age.

Nearly all these boys came from primary schools.
The sentence for exposition was :—

“*Der Bauer bestellt den Acker.*”

“The farmer tills the field.”

Teacher. Give the sentence with the verb in the perfect tense.

Now in the pluperfect tense.

What is the subject ?

What is the predicate ?

What is the object ?

What case is *Acker* ?

What is the nominative of it ?

What kind of verb is *bestellt* ?

What do we mean by a transitive verb ?

What is the name of the verb ?

Give the indicative present.

Give the subjunctive present.

Now give the future indicative in the active form.

Now the future indicative in the passive form.

Put the whole sentence in the passive form.

Pupil. *Der Acker wird von dem Bauer bestellt.*

Teacher. Place this sentence in the plural throughout.

The next illustrative sentence was :—

“*Knechte unterstützen ihn.*”

“Labourers assist him.”

Teacher. Give the passive form.

What person is *ihn* ?

What person is *mir* ?

There was confusion here between the person speaking and the person spoken of, a distinction which English boys also find very difficult to grasp, though to educated adults it seems so simple.

Next, *ich habe gehört* was taken as text ; and the teacher asked for person, number, and tense ; for the indicative present, the imperative, and the subjunctive present ; for the moods in the passive construction. The answers were rapid, unhesitating, and accurate.

Then *du singst* was given, and person, number, tense, mood, and voice were asked for.

Finally *ich bin gegangen* was given, and requests were made for the conjugation in the plural. There was some unexpected hesitation here ; but, on the whole, this lesson, with its rapid oral parsing, and the more difficult exercises in which the required form was asked for, when mood, voice, tense, person, and number were stated, struck me as admirable, and gave one reason for the success of the Germans in studying foreign languages, starting, as they do, with such an excellent grammatical equipment in their own.

CHAPTER XV

FOREIGN LANGUAGES

I.—FRENCH

Leipsic.—Higher Primary School. Class IV. Thirty children were present, ten and eleven years of age.

This class began French at Easter ; it was now September. Four hours a week had been given to the subject.

The lesson followed the book, which was chosen by the municipal school authority, and of which each child had a copy.

Each lesson in the book contained :—

1. A short vocabulary.
2. Grammar.
3. Exercise to be written *and* spoken.
4. Conversation.

The teacher stated that he taught on the new method, commencing by short spoken and written sentences, naming and placing the objects in the schoolroom. The vocabulary of about a dozen of the earliest lessons consisted of names for parts of a room, the desks, seats, blackboards, clothes, and parts of the body ; but grammar was introduced from the first

lesson, so that one of the essential elements of the new system, viz., the postponement and the inductive elaboration of grammar, was absent.

The class had reached the Seventh Lesson, which dealt with ordinals and sentences containing them.

Teacher. What is "first" ?—*Le premier.*

Now give the feminine.—*La première.*

The children answered individually and then collectively, the teacher strongly emphasising the French pronunciation.

What is "second," masculine ?—*Second.*

What is "second," feminine ?—*Seconde.*

What is "four" ?—*Quatre.*

What is "fourth" ?—*Quatrième.*

What is "nine" ?—*Neuf.*

What is "ninth" ?—*Neuvième.*

The lesson was conducted in German; genders were insisted on throughout, and I was surprised at the regret and shame with which the children stood convicted of an error.

Then the sentences in the book were read, at first simultaneously after the teacher, and then individually.

Example. Mon amie Eugénie a neuf ans.

Children individually stood up and orally translated the French exercise into German. This was both rapid and accurate.

Each child had a little note book in which difficult words and typical sentences were written. These they learn by rote at home.

Sight and sound, said the teacher, must be united.

Then, without the book, came a series of questions on the exercise—

Wie heisst " Wir haben " ?

(Translate " we have.")

Only eight out of thirty with hands up.

Then *Wie heisst " élève " ?* Answer : *Schüler.*

Now give the feminine.—*Schülerin.*

Now the feminine plural.—*Schülerinnen.*

Then, *Wie heisst " ella a " ?*

This verbal equivalent again seemed to give difficulty.

A conversation section concluded the lesson—the class first repeating what had already been dealt with in a previous lesson.

Teacher. Qui est sur le banc ?

Pupil. Charles est sur le banc.

Teacher. Où est le maître ? Qui a l'éponge ?

Pupil. Le maître a l'éponge.

Teacher. Pour qui est la chaise ?

Pupil. La chaise est pour le maître ou pour la maîtresse.

Teacher. Qui est malade ?

Does *malade* agree ?

(Predicative adjectives in German do not.)

Teacher. Would it in German ?

"Wherever it is possible," said the teacher, " I show the objects ; for example, when I say *Qui a le canif*, I show one." This is part of the new method of language teaching.

The conversations were in French only, but the German explanations were given if any difficulty arose. A series of rapid questions and answers followed as to the pens, paper, blackboard, and their positions.

It is to be noted that the conversations are not really conversations, and the opponents of this system say they merely involve the parrot repetition of the teacher's own words.

It seemed to me that the pronunciation was much better than that of English children of the same age. The teacher, who knew English, thought that French sounds were easier for German children than for English children. However this may be, there is no doubt that the practice of oral, as well as written exercises, from the very first, has much to do both with better pronunciation and increased speed.

Frankfort.—Higher Primary or Middle School. Class

I. About twenty boys present, average age, fourteen years.

These boys had taken French for five hours a week for five years.

At my request the teacher gave orally some German sentences of considerable difficulty, and the pupils at once wrote the French translation. I append the sentences and their French equivalents as given by him:—

1. Warum sind Sie mir böse? Ich bin Ihnen nicht böse.

Pourquoi m'en voulez-vous? Je ne vous en veux pas.

2. Haben Sie die Güte, mir zu sagen, ob Herr N. in diesem Hause wohnt.

Veillez me dire, si monsieur N. demeure dans cette maison.

3. Ich wünschte, dass Sie Ihre schriftlichen Aufgaben mit etwas mehr Aufmerksamkeit machten.

Je voudrais que vous fissiez vos devoirs avec un peu plus d'attention.

4. Die Augen Gottes sehen alles, was wir tun.

Les yeux de Dieu voient tout ce que nous faisons.

5. Seit jener Zeit haben wir uns nicht wiedergesehen. Depuis ce temps nous ne nous sommes plus revus.

6. Wir sahen jetzt, dass die Armen in Amerika nicht anders leben als bei uns.

Nous vîmes alors que les pauvres ne vivent pas autrement en Amérique que chez nous.

7. Du wirst bald sehen, dass Du Dich getäuscht hast.

Tu verras bientôt que tu t'es trompé.

8. Die kleinen Kinder wollen immer tun, was sie die Erwachsenen tun sehen.

Les petits enfants veulent toujours faire ce qu'ils voient faire les adultes.

9. Von wem weißt Du, dass er morgen zurückkommt ?

De qui sais-tu qu'il revient demain ?

10. In Deutschland giebt es fast keine Leute mehr, die nicht lesen und schreiben können.

En Allemagne il n'y a presque plus de gens qui ne sachent lire et écrire.

11. Ich könnte es Ihnen sagen, aber ich will nicht.
Je pourrais vous le dire, mais je ne veux pas.
12. Es ist möglich, dass ich Unrecht habe, aber Sie haben keine Beweise dafür.
Il se peut que j'aie tort, mais vous n'en avez pas de preuves.
13. Wir hatten uns für mehrere Tage, mit Lebensmitteln versehen.
Nous nous étions pourvu de vivres pour plusieurs jours.
14. Du musst Deine Lection besser lernen.
Il faut que tu saches mieux ta leçon.

I give below an exact copy of a few of the papers worked under the above conditions. Errors are underlined by the teacher. One of the papers is said to be written by one of the best pupils in the class, one by an average pupil, and one by a weak pupil.

A.—1. Pourquoi m'en voulez-vous? Je n'en veux pas à vous.

2. Veuillez me dire si Monsieur N. demeure dans cette maison ?

3. Je voudrai que vous fissiez vos devoirs avec un peu plus d'attention.

4. Les yeux de Dieu voient tout ce que nous faisons.

5. Depuis ce temps nous ne nous sommes pas revus.

6. Nous vîmes alors que les pauvres en Amérique ne vivent pas autrement comme chez nous.

7. Tu verras bientôt que tu t'es trompé.

8. Les petits enfants veulent toujours faire ce qu'ils voient font les adultes.

9. De qui sais-tu qu'il revienne demain ?

10. En Allemagne il n'y a plus presque de gens qui ne savent pas lire et écrire.

11. Je pourrai vous le dire, mais je ne veux pas.

12. Il se peut que j'ai tort, mais vous n'en avez pas des preuves.

13. Nous nous étions pourvous pour plusieurs de jours.

14. Il faut que tu saches mieux ta leçon.

B.—1. Pourquoi m'envoulez-vous? Je ne vous en veux pas.

2. Veuillez me dire si Monsieur N. demeure dans cette maison.

3. Je voulais que vous faites vos devoirs avec un peu plus d'attention.

4. Les yeux de Dieu voient tout ce que nous faisons.

5. Depuis ce temps nous ne nous sommes pas revus.

6. Nous vîmes alors que les pauvres ne vivent pas autrement en Amerique que chez nous.

7. Tu verras bientôt que tu t'es trompé.

8. Les petits enfants veulent toujours faire ce qu'ils voient faire les adultes.

9. De qui sais tu qu'il revienne demain.

10. En Allemagne il n'y a pas des gens qui ne sachent lire et écrire.

11. Je pourrais vous le dire ; mais je ne veux pas.

12. Il se peut que j'ai tort ; mais vous n'en avez pas des preuves.

13. Nous vous étions pourvous de vivre pour plusieurs jours.

14. Il faut que tu sais mieux ta leçon.

C.—1. Pourquoi m'en voulez-vous ? Je ne l'en veux pas.

2. Veuillez me dire si monsieur N. demeure dans cette maison.

3. Je voudrais que vous fissiez un peu attention vos devoirs.

4. Les yeux du Dieu voient tout ce que nous faisons.

5. Depuis ce temps nous ne nous sommes pas revus.

6. Nous vîmes alors que les pauvres en Amérique autrement ne vivent pas que chez nous.

7. Tu verras bientôt que tu te sois trompé.

8. Les petits enfants veulent toujours faire ce qu'ils voient faire les adultes.

9. A qui sais tu qu'il revienne demain.

10. En Allemagne presqu'il y a aucun gents plus qui ne sachent pas lire et écrire.

11. Je pourrais le dire mais je ne veux pas.

12. Il se peut que j'ai tort, mais vous en avez aucunes preuves.

13. Nous nous étions pourvus avec des vivres . . . plusieurs jours.

14. Il faut que tu saches mieux ta leçon.

The same pupils were required to write a dictation exercise under test conditions. I have a selection of papers from members of the class of varying capacity. The dictation is extremely well done. I append the paper containing the largest number of errors, which are underlined by the teacher.

FRÉDÉRIC LE GRAND À VOLTAIRE.

Le sept octobres mille sept cent quarante trois.

La France à passé jusqu' à présent pour l'asyle des rois malheureux ; je veux que ma capitale devienne le temple des grands hommes. Venez-y mon cher Voltaire, et dictez tout ce qui peut vous y être agréable. Je veux vous faire plaisir et pour obliger un homme il faut d'entrer dans sa façon de penser.

Choisissez appartement ou maison réglez vous même ce qu'il vous faut pour l'agrément et le superflu de la vie ; faites votre condition comme il vous là faut pour être heureux, c'est à moi à pourvoir au reste. Vous serez toujours libre et entièrement maître de votre sort ; je ne prétends vous enchaîner que par l'amitié et le biens-être.

Vous aurez des passe-ports pour des cheveux et tout ce que vous pourrez demander. Je vous verrai mercredi et je profiterai des moments qui me restent pour m'éclairer au feu de votre puissant génie. Je vous prie de croire que je serai toujours le même envers vous. Adieu.—FRÉDÉRIC.

Berlin.—Secondary Modern School. Class IV.

Thirty - three boys were present, eleven and twelve years old.

This class began French at Easter. The scholars had consequently been working at the subject about six months, giving eight hours a week to it.

When I entered the room the boys were, with

their teacher's help, correcting a dictation exercise in French.

The next section of the lesson was occupied in translation; a boy read from his note book a list of German words, one by one; the remaining boys, round the class, gave the French equivalents, the vocabulary having been prepared at home; *e.g.*:—

finden—*trouver*,
ermüdet—*fatigué*,
fortsetzen—*continuer*,
glücklich—*heureux, heureuse*.

Then some of the boys in order, as before, placed the French words of the vocabulary into very easy sentences, other boys being required to translate these sentences orally into German. This part of the exercise was extremely well done, and I looked forward to seeing the exercise books with pleasure. In these the boys wrote their exercises at home, German into French. Some were accurately done, but many were not. Sound and meaning were associated, but written word and meaning apparently not so well; with us the reverse is usually the case. Now the first process was repeated, German words were given, and individual boys gave French equivalents; *e.g.*:—

Vorschlagen—*proposer*,
er schlägt vor—*il propose*,
eine Reise—*un voyage*.

Then the teacher asked for the present indicative of "*continuer*."

"Now," said he, "use the question form."

Now give the present indicative of "*proposer*" to be used in the sentence,

Il propose un voyage.

Now conjugate the question form, commencing thus:—

Propose-je un voyage?

and so on.

This teacher, who favoured the new method of language teaching, told me that he believed in as little grammar as possible, but thought that a good deal was inevitable. One must bear in mind that the sound grammatical teaching which the Germans give in their own tongue places the boys in a position much superior to our own for grasping the grammatical aspects of a foreign language.

Berlin.—Secondary Modern School. Class II. Forty-two boys were present, twelve to sixteen years of age.

The boys in this class had studied French for two and a half years, taking eight hours a week in the first two years and six hours a week since Easter. It was now September.

The teacher first dealt with the reading lesson in French, and then passed to that section of the lesson which consisted of questions and answers in the foreign language.

Teacher. Avez-vous vos livres sur la table ?

Pupil. Non, nous ne les avons pas.

Teacher. Où tenez-vous vos livres ?

Pupil. Nous tenons nos livres dans le sac.

Teacher. Où tenez vous votre sac ?

Pupil. Je tiens mon sac dans mon pupitre.

Teacher. Êtes-vous toujours attentif ?

Pupil. Je ne suis pas toujours attentif.

Teacher. Dans quelle maison entrez-vous tous les jours ?

Pupil. Nous entrons tous les jours dans la maison d'école.

Teacher. Par où passez-vous ?

Pupil. Nous passons par le vestibule.

Teacher. Qu' est ce que vous montez ?

Pupil. Nous montons l'escalier.

This was undoubtedly well done. The questions called for some actual effort, but one must remember the time given to this subject when comparing the work of English boys of the same age. Probably, however, in most cases the meanings are attached directly to the sounds, and do not, as so often with us, have to pass through a visual interpretation before any meaning is arrived at.

The next section dealt with grammar exclusively. The practice for this lesson was the moods and tenses of *écouter*. The scholars gave the present tense of the indicative correctly, and put each form at once into an illustrative sentence ; and the same was done with the various forms of the imperative mood. Each boy had a small manuscript book, in which he wrote his exercises at home, German on one page, and French on the page opposite. It was from these books

that the teacher took the materials for the conversations which have been described above. I say "took the materials" advisedly, for an essential point in the oral work was that it was not an exact repetition; though neither grammatical rules nor accident were required which had not been dealt with in preceding exercises.

Leipsic.—Higher Primary or Middle School. Class 1.*a*.

Thirty girls were present, fourteen and fifteen years of age.

The first section of the lesson consisted of an oral translation into French of the following *thème* from the French books, which contained exercises, reading lessons, and grammar.

Luise, schläfst Du noch? Es ist 5 Uhr, stehe auf (=gehe aus dem Bett), und kleide Dich an. Du hast lange genug geschlafen.

(Louisa, are you still asleep? It is 5 o'clock; get up and dress yourself. You have slept long enough.)

Wir wollen heute einen kleinen Ausflug auf dem Rheine machen, der Zug fährt um 6 Uhr ab. Wenn Du nicht sofort aufstehst, &c.

(We are going to-day to make a little excursion on the Rhine. The train starts at 6 o'clock. If you do not get up immediately, &c.)

This had not been prepared, and the teacher expressed dissatisfaction with the attempt. Certainly there were many mistakes, but it was much, I thought, that the children could attempt this orally at all. The

teacher called frequently for terminations and accents, and pointed out to me how extremely necessary this was, as they are frequently in no way indicated by the French pronunciation.

Then came a series of grammatical questions, such as—

Translate *Ich muss sofort*, &c.

Answer. Il faut que je, &c.

The pupil gave the present indicative of the French verb but was stopped, and other more familiar examples were given. Then the rule bearing on the point was asked for, and several children were required to give it in German.

This section of the lesson lasted twenty-four minutes.

The next section was reading and translation, French into German. The reading lesson was also in the book which contained the grammar and exercises. Each child read a few lines in French and then translated orally into German. Sentences such as *Lorsqu'il fait froid, il n'y a plus d'insectes*, were at once rendered. This was translated into *Wenn es kalt ist, giebt es keine Insecten*.

Exercises were given on the parts of the French verbs which occurred in the reading, *e.g.*:—

Teacher. Give infinitive of *ils s'en vont*.

Now the present indicative of this verb.

These were correctly given, and the teacher asked for the German equivalents of the more unusual French words before the sentences were translated.

Two blunders for *les canards* elicited roars of laughter, in which the teacher joined with hearty good-fellowship.

This section lasted fifteen minutes.

The teacher then told a short story containing the words and grammatical points just dealt with, and individual children stood up and fluently gave the story in German.

Then followed a conversational section, based upon the reading lesson and corresponding conversation lessons in the books, which were closed. The teacher questioned in French, and was answered in French with little or no hesitation. He spoke very slowly, very emphatically, and very distinctly. I append the questions :—

Combien les oiseaux ont-ils de pieds ?

Comment appelle-t-on les pieds des oiseaux de proie ?

De quoi le corps de tous les oiseaux est-il couvert ?

A quoi servent les ailes ?

A quoi sert le bec des oiseaux ?

Où les oiseaux couvent-ils leurs œufs ?

Qu'est ce qu'un nid ?

Où cherchez-vous les nids des oiseaux ?

Quel oiseau de la forêt ne couve pas ses œufs lui-même ?

Pourquoi cet oiseau est-il nommé coucou ?

Qu'appelle-t-on oiseaux chanteurs ?

Nommez-en quelques-uns !

Où les oiseaux aiment-ils à se percher pour chanter leurs jolis chants et pour dormir ?

Lequel des oiseaux chanteurs chante le mieux ?

Dans quelle saison les oiseaux chantent-ils le plus ?

Quel oiseau s'élève en l'air pour faire entendre ses chansons ?

Quels oiseaux trouve-t-on en cage dans nos chambres ?

De quelle couleur est le canari ?

Pourquoi le rouge-gorge porte-t-il ce nom ?

Quel est l'oiseau le plus connu dans nos pays ?

Pourquoi n'aime-t-on pas les moineaux ?

Où est-ce qu'ils font beaucoup de dégât ?

Nommez un oiseau tout noir et un oiseau gris !

Qu'est ce que les oiseaux de passage ou oiseaux voyageurs ?

Quels oiseaux nous quittent en automne ?

Pourquoi nous quittent-ils et où vont-ils passer l'hiver ?

Quelle est la couleur de l'hirondelle ?

Où l'hirondelle bâtit-elle son joli nid ?

Est-ce qu'on chasse cet utile oiseau des étables ou des maisons où il bâtit son nid ?

Nommez le plus grand oiseau !

Et le plus petit !

Quel est le nom du plus bel oiseau ?

Nommez-moi plusieurs oiseaux de proie !

Comment sont les pattes des oiseaux de proie !

De quoi ces oiseaux se nourrissent-ils ?

Le hibou est-il aussi un oiseau de proie ?

Est-ce qu'il sort pendant qu'il fait jour ?

Pourquoi les hiboux ne sortent-ils que la nuit ? Où se trouvent leurs nids ?

The general class directions were given in French, but the teacher did not hesitate to explain in German where necessary.

These children had studied French for about four years, giving four lessons a week to the subject, each lesson an hour long.

Hamburg.—Secondary Modern School. Class I. (the fourth form). Average age, fifteen and a half years.

This was the sixth year at French, at first six and subsequently five hours a week having been given to the subject.

The lesson opened with some explanations by the teacher in German.

Then came the reading exercises, which were found at the end of the grammar book, and had especial relation to certain grammatical sections.

I append a paragraph to indicate the difficulty of the passage :—

Le chevalier, à la faveur de ce secours se relève et se joignant à ses deux (word obliterated in my notes), enfonce son épée jusqu'à la garde dans un endroit qui n'était point défendu par des écailles ; il y fit une large plaie, d'où il sortit des flots de sang. Le monstre, blessé à mort, tombe sur le chevalier, qu'il abat une seconde fois.

Each passage was first read in French, and then orally translated by individual pupils into German. Various parts of the verb were asked for ; difficult

pieces were picked out and grammatical explanations required in German. A question as to the different uses of the dative and accusative in German and French was not answered, nor were the boys as fluent as usual.

The written work seemed small in amount compared with the oral; to me it seemed inadequate. The teacher admitted that written work gave more assurance and was a better test of progress.

The pupils proceeded slowly, and twenty minutes was occupied in translating twenty-four lines of French into German.

I asked the teacher if he ever questioned in French. He thought it useless to ask grammatical questions in French, and with his view I was substantially in agreement. I was anxious, however, to hear how the pupils would answer questions in French on the French passages read, but was unable to get this done.

In the Secondary School Leaving Certificate, for which these pupils would soon be eligible to sit, it will be remembered that French is very important, being one of the subjects which the inspector must examine. Two passages are given, German for translation into French, and French for translation into German, as well as exercises in French reading.

Hamburg.—Secondary Modern School. Class I.

Twenty boys were present, fifteen and sixteen years of age.

This class gave five hours a week to French, and had done so for about six years. Two of the five

weekly lessons were mainly grammatical, the others were given to reading and composition.

This was a reading and translation lesson. The boys were reading well from a *History of France* (1560-1643). Explanatory remarks were made in German, one of the explanations involving a reference to, and a short description of, French finance just prior to the Revolution. I was impressed by the basis of general European history which appeared to be assumed in these explanations, and the apparent justification of the assumption. Many corrections of pronunciation were necessary, and were at once made by the teacher. The lesson was then orally translated into German. This translation was very readily done, one and a half pages being read and translated in thirty minutes. Questions on the subject-matter formed the next section of the lesson. These were asked and answered in German. Occasionally questions were asked and answered in French.

The teacher of this class was a young teacher who had just passed his examinations. I asked him his opinions on the pedagogical discussions about language teaching. He said very modestly he did not know yet; many of our teachers, fresh from training college, would have known best.

Berlin.—Secondary Modern School. Class I. Fifteen boys were present, sixteen and seventeen years of age.

In the first section of the lesson the scholars read

an historical account of the Massacres of September, commencing—

“Les nouvelles de la guerre vinrent porter à son comble l'exaspération du parti révolutionnaire.”

The lesson was read, passage by passage, by individual boys, and then translated into German.

The boys I heard were distinctly slow but accurate. Relatively unknown words were, at the teacher's order, written down by the pupils in small note books and the German translation appended.

I was allowed at this point to look at the boys' books of grammatical exercises and essays. The books, as is usual in Germany, were most carefully marked, but I thought the mistakes were rather numerous. I enquired as to the teaching of grammar. This teacher said it was necessary, because the time was so short, and that one could not possibly dispense with it.

Then followed rapid grammatical questions on the parts of the verbs and the grammatical constructions in the lesson just read, the constructions being further illustrated by new sentences given by the pupils. This part of the work was extremely well done.

Berlin.—Secondary Modern School. Class I. Twenty boys were present, averaging sixteen years of age. French had been studied for four years; for the first and second years for eight hours weekly, and for the third and fourth for six hours weekly.

The first section of the lesson consisted of a *vivid*

voce correction of the exercise which had been written at home. The explanations were in German, the teacher stating that this was his usual practice, as otherwise he would be explaining the unknown by the still more unknown.

Next the boys read, one by one, from Gabriel Ferry's *Contes Choisis*. The teacher stopped all mistakes in pronunciation and called on other boys for corrections. Then, on each section, there were questions in French, which selected pupils answered in French. This was good but rather slow, as the boys did not know the story by rote and many of the sentences required a real exercise in construction. The teacher, who did not think highly of the new method, pointed out that by that method the answers were too often mere repetitions, and that he wished to give an actual exercise in thought in each case.

The boys translated exercises at home, but did not attempt original compositions; what they did rather was to give short summarised accounts of what they had read. The teacher was kind enough to give me some pages of such work which had been done, he said, by typical scholars. I reproduce one of these exactly as written, prior to correction :—

Le 26 Mars 1811 le général Rayon se mit en marche du Saltillo à Lacatecas. Ruperto Castaños se trouvait parmi les partisans dévoués à ce général. Pendant quatre jours il fallut que les soldants combattissent sans cesse contre les Espagnols. Après une de ces escarmouches les outres des Mexicains avaient été éventrées, les barils défoncés et ils se trouvaient

dans un désert sans sources. Tout étaient couché sur le sol haletants de soif et de fatigue. Les sentinelles n'avaient presque plus la force de tenir leurs fusils. Ruperto était aussi très anéanti, mais un soldat nommé Valdivia lui apportait un peu d'eau. Ils me dit qu'il faut monter à cheval aussitôt pour prendre l'endroit où se trouvait l'eau. C'était une hacienda. Alors il s'éloigna en emportant l'outre avec lui. Lorsque la nuit était venue Valdivia venait et me passa une outre pleine et rebondie, et cent cavaliers prêts à partir m'attendaient. Je demandai à Valdivia pourquoi nous n'avertîmes le général qu'il nous donna un millier d'hommes. Il répondit, que le général n'était plus maître de ses troupes et continua-t-il, si nous n'enlevons pas tout de suite l'hacienda, demain le général n'aura plus un soldat. A peine avait-il fini qu'un grand tumulte se fit entendre.

À la lueur de beaucoup de torches qui allaient et venaient, nous vîmes le général s'avancer seul vers les soldats les plus furieux, mais ils ne lui obéissaient pas. Valdivia dit : Il n'y a pas de temps à perdre, encore cette nuit il faut que nous puissions annoncer au général que ses troupes auraient de l'eau demain. Nous partîmes à cheval mais Valdivia me porta un soldat en costume des lanciers espagnols. Pendant l'absence du soldat le tumulte s'était calmé. Nous rejoignîmes des cavaliers qui nous attendaient dans la plaine et nous chevauchâmes vers l'hacienda.

II.—ENGLISH

Hamburg.—Primary School. *Selecta*. Nine boys were thirteen, twenty-three boys were fourteen years old.

It will be remembered that foreign languages are not usually taught in the primary schools of Germany. In Hamburg, however, English is taught for four hours a week, and is begun, according to the *Lehrplan*, in the third class, which corresponds to our Standard V. In this class the children were staying somewhat beyond the ordinary school age, namely, fourteen, and this was, as we should say, a class beyond the standards, or Ex-VII., and is called by the Germans *Selecta*.

The lesson began with translation from English into German from the "Two Goats," a passage familiar to teachers who use the New Royal Readers.

"Two goats had left a valley and climbed far up a mountain. At length they met on the banks of a wild rushing stream."

Another passage dealt with was :—

"Soon she met a poor man who said to her, 'Give me something to eat, for I am hungry.' Next she met a little girl crying very much."

I give the above passages, partly to illustrate the stage of difficulty reached in the English itself, and partly, for those who know German, to see the difficulties or lack of them in the translation into German.

The teacher spoke English well, but the pronuncia-

tion of the boys was not very good. None of them, however, seemed to have difficulty in translating the English orally into German.

The teacher asked a few questions during the translation, such as, "Give another English way of saying 'a little girl crying very much,'" and was answered, "A little girl who cried very much."

The next section of the lesson was a composition. The outline was in the English book, thus :—

A Balloon

"1. A balloon, a large, spherical bag of silk, filled with gas. 2. To rise and float in the air. 3. The man who ascends in it, the balloonist." And so on.

The children were then required to ask a question on each section. "Who can give the first question?" said the teacher. One boy said, "What is a balloon?" and was answered, "A balloon is a large, spherical bag of silk, filled with gas." Another boy gave the second question, "What is a balloon for?" But the teacher preferred the question, "What can it do?" to which the answer was given, "It can rise and float in the air." The third question was given, "What is the man called who ascends in it?" and the answer was, "The man who ascends in it is called the balloonist."

Doubtless this exercise has value, but it is certainly not a composition in any sense; it is really dictation, each complete sentence being written down in the words of the book with the addition of a few connective words.

The teacher was kind enough to allow me to ask

some questions in English. The majority of the boys followed without difficulty and answered with accuracy.

I am unable to give my questions, as they had to be prepared on the spot, and I could not recall many of them with sufficient accuracy afterwards. I remember, however, and have noted that the boys were able to give correct answers to the following. I gave a sentence in the present tense—"I give away my hat." "What shall I say if I did it yesterday?" I was answered, "I gave away my hat," and also, "I have given away my hat." "What do I say if I shall do it to-morrow?" I was answered, "I will give away my hat." Then I took the verb "write." "What do I say if I go on doing it?" The answer was given, "I am writing." "And what if it is finished?" The answer came, "I have written."

"I swim." "What tense is the verb?" *Answer*—"Present tense."

"Put a noun with it." *Answer*—"The fish swims." "Give another present tense." *Answers*—"The fish is swimming," "Fishes can swim," "Fishes swim."

The answers showed a grammatical grasp in another language which many of our primary school boys would not have had in their own.

Frankfort. — Higher Primary or Middle School.

Class I. About twenty boys were present. The official age was thirteen to fourteen years, but several of these boys were really fifteen years old.

This class had studied English for one year only.

The next lesson in the English reading books was entitled "The Meadow." I give the first and second paragraphs :—

The Meadow

"From the hill I went straight down to the meadows below, and walked on the side of a brook that runs into the river. It was all bordered with reeds and flags and tall flowering plants, quite different from those I had seen on the heath. As I was getting down the bank to reach one of them, I heard something plunge into the water near me. It was a large water-rat, and I saw it swim over to the other side and go into its hole.

"There were a great many large dragon-flies all about the stream ; I caught one of the finest, and have got him here in a leaf. But how I longed to catch a bird that I saw hovering over the water, and every now and then darting down into it."

After the class had read the lesson through, the books were closed, and the teacher requested me to ask questions in English on the subject-matter. He, being a determined opponent of the "New Method," was anxious that I should ask the questions in such a way as to make it impossible for the pupils to answer the questions by using the exact words of the book, without change in number, mood, tense. I did my best to comply with his wishes, and I regret that I am unable to give the questions which I asked. But I have a note on the result to the effect that my questions were understood by nearly every pupil in the class,

and that the answers were so extremely good that criticism was lost in admiration.

Berlin.—Secondary Modern School. Class II. Fifth School Year. Forty-two boys were present. Their ages ranged from twelve to sixteen ; the majority of those who were twelve came from the public elementary schools.

This class had begun English at Easter ; it was now September, and in the intervening period six hours a week had been given to the subject.

The lesson opened by the reading of passages from "The King and the Miller."

"There lived a miller hale and bold
Beside the river Dee," &c.

Each boy read in turn, and faulty pronunciation was corrected.

The pronunciation was good, and would have surprised those who tell us that we must have foreign teachers for the sake of accent.

The lesson was conducted in German and the grammatical questions asked in German.

The next section of the lesson was translation. Piece by piece the pupils turned the English sentences into German, *e.g.* "I love my wife—*Ich liebe meine Frau.*" "That turns the mill—*Die die Mühle dreht.*" Then followed the exercise to which the new school of foreign language teachers attaches so much importance. The English lesson was questioned on in English, and answers were required in English.

The following are some of the questions asked by the teacher :—

“What is the head of our poem ? ”

“Where did the miller dwell ? ”

“How was the miller ? ”

“What did he from morn till night ? ”

“What could not be more blithe than he ? ”

“What was the burden of his song ? ”

To those who know the poem, and those who do not will, perhaps, refer to it, it is at once apparent that the answers to the questions can be given exactly in the words of the book. There is no effort of construction, no change of number, gender, case, mood, tense, &c., to consider. The questions are not real questions at all, except as a test of rote memory. Such an exercise is valuable, of course, and superficially very striking, but much inferior to oral exercises which involve construction as well as repetition.

Berlin.—Secondary Modern School. Class I. Thirty-seven boys were present. Six boys were fifteen, fifteen were sixteen, eleven were seventeen, four were eighteen, and one was nineteen years old.

Twenty-five of these boys, four of whom had free places, came originally from the primary schools.

It will be remembered that less time is given to English than to French. The teacher of this class, who taught both French and English, thought that a justification of this practice arose from the much greater difficulty of French grammar. It was his

invariable experience that the French exercises, notwithstanding the greater time given to the subject, were done worse than the English ones.

In Berlin, on account of the entries from the primary schools, French is not begun till the fourth class, when the pupils are about twelve years of age, and English is commenced later still.

The lesson opened with questions on English grammar, the instruction being given in German. The grammar, said the teacher, was difficult enough in itself; why complicate it by attempting to explain in the foreign language? With this I heartily agreed, but pointed out that it was not in accord with the ideas of the new method. The first burst of the direct method had, the professor said, largely spent itself, and he thought that Germany was likely to retrograde a little in the question of grammar in connection with foreign languages; there never had been any dispute as to the need for careful study of their own.

The lesson proceeded by question and answer, but the questions were such as required some thought to answer, and were not simple verbal transpositions.

The following were typical :—

What are the uses of the English construction of the accusative and the infinitive?

What becomes of the subject of the subordinate clause?

What change does the predicate undergo?

Then followed a number of English examples, both active and passive, German explanation and translation being freely used.

The grammar and exercise book used by the pupils contained, of course, many illustrative sentences in English, and it is noteworthy that these were taken from English school-books, and not from standard authors.

The English reading book was "Little Lord Fauntleroy." The pupils appreciated the joke, only possible with the American pronunciation of "aunt," which confounded "ancestors" and "aunt's sisters"; and read with a fairly good pronunciation, the teacher's own being practically perfect. This teacher lectured on English writers, in English, at university classes.

I asked permission to speak to the boys on the subject-matter of their book. I was followed with rapt attention and with perfect comprehension, as the answers to my questions showed. In this class admirable work was being done in English, but I rather question the advisability of American English being given in a text-book. There were Americanisms in the answers which would have to be unlearned; but it is ungracious to criticise at all what was so excellently done.

Berlin.—Secondary Modern School. Class I. Fifteen boys were present, of whom two were fifteen, five were sixteen, five were seventeen, and three were eighteen years old.

The boys were reading an English book called "The Victorian Era," chap. iv. : the Post Office. The notes were at the end, so that no immediate assistance was available from them.

The reading and pronunciation were extremely good, but the *th* sound, as might be expected, gave trouble.

Then the teacher questioned in English on the subject-matter, but I noticed that the answers were such as came directly from the words of the text or from the notes.

The teacher was kind enough to let me question in easy English, and the boys followed perfectly, but an answer which required a grammatical construction not in the text was hard to obtain. My opinion was that a more thorough training in grammatical composition would have overcome the hesitation; but, even allowing for this, the foreign language instruction was here, as elsewhere in Germany, of a very high order.

Hamburg.—Secondary Modern School. Class I.

The boys in this class were mostly sixteen years of age, and had studied English for four hours a week for about four years.

They were using a German book on English history. The section dealt with was—

“The Overthrow at Cabul.”

The pronunciation was fairly good on the whole, but many boys were relatively imperfect. The lesson was first read in German and was followed by oral translation into English, passage by passage—“*dessen Name später einen verhassten Klang für englische Ohren gewinnen sollte*” was naturally enough trans-

lated, "whose name should," for "whose name was to." "*Es hätte ein Triumphzug sein müssen*" was translated, "He might have had a triumphal entry," for "It might have been," &c. Such expressions as, "They condescended from their houses to see him passing," and "The baddest observer," were given. The grammatical point of the double infinitive with "to see" was well handled by the teacher, and the mistakes throughout were surprisingly few.

The teacher kindly allowed me to ask the boys questions in English on the subject-matter of the lesson. These questions they answered in English. Both their knowledge of the history and geography connected with Cabul, and their expression of it, were admirable. I regret that I am unable to reproduce the questions and answers, for I was unable to note down the questions as well as to ask them.

Hamburg.—Secondary Modern School. Class I.*b*.

Sixteen boys were present; two were fourteen, nine were fifteen, six were sixteen, and one boy was seventeen years old.

There are three "forms" above this—Higher and Lower *Prima* and *Secunda*.

The first section of the lesson consisted in the translation of sentences from German into English, illustrating the use of the adverb; and was entirely oral.

I append an extract from the German book to show the difficulty of the sentences :—

Nachdem Franz Drake um die Welt gesegelt war, kehrte er im November 1580 wohlbehalten nach Plymouth zurück.

(After Francis Drake had sailed round the world, he returned safely in November 1580 to Plymouth.)

Mein Bruder kam gestern Abend hier, und wird bis morgen hier bleiben.

(My brother came here yesterday evening, and will remain here till to-morrow.)

Ich werde am nächsten Montag nach Berlin zurückkehren.

(I shall return to Berlin next Monday.)

Zuerst schnitt König Alfred kleine Scharen der Dänen ab; dann griff er ihr grosses Heer an, schlug sie und schloss sie in ihrem Lager in der Nähe von Edington ein.

(In the first place, King Alfred cut off small parties of the Danes; then he attacked their main body, defeated them, and shut them up in their camp near Edington.)

Two or three boys translated these passages into English very fluently; the teacher said, however, that these were the best boys.

The next section of the lesson consisted of reading from their books "The Little Londoner" and "Explorers and Inventors." This was well done.

The teacher was kind enough to allow me to ask in English some easy questions arising out of what the scholars were reading. I was readily understood, but the pupils could speak but little. It was rare, however, to find a class where the power of oral

expression was much behind the power of auditory understanding.

Hamburg. — Secondary Modern School. Class I.

Eight pupils were present, the remainder being absent at an examination. They ranged from sixteen to twenty years of age.

Four hours a week had been given to this subject for about five years.

The book in use in the class was "The England of Shakespeare," by E. Goadby. The following were some of the sections :—

1. Hotels and postal communication in the time of Mary and Elizabeth.

2. Wages in the time of Mary, Elizabeth, and James.

3. Forests and cultivated land ; position and proportion of each.

4. Fairies and national legends.

5. Castles and convents, moats and fishing-ponds, abbeys and their ruins.

Reference was made by the teacher to Scott's "Kenilworth," which the pupils had read, and they were called upon to say a few words about castles.

At this stage the teacher gave no regular grammar lessons, but grammatical rules were always referred to when the correction of the written exercises took place.

I asked the teacher if he would permit the pupils to do a written exercise for me. I should have liked a

composition on an easy subject, but the teacher said he should prefer them to read a section of their book, and then write an account of it. This was done, and the papers given to me. I select three, and print them without alteration. I may add that I was present during the whole time that the exercise was written, and that no assistance of any kind was given to the students. The general excellence of the work needs no comment but that of praise :—

1. Shakespeare will always be a secret to us. We know of other great men that they have had rare teachers or influent friends. Shakespeare had nothing of these. His father was a yeoman, a man of mean culture. Shakespeare lived in a surrounding of men who had already become famous and yet he succeeded in arising himself over his contemporaries. But we don't know him ; he lives in his works ; his age is there, his secret is there. Some great men created their age, as Bismark and Louis XIV. did. Other, as Luther, were created by their age. So was Shakespeare.

2. It is a remarkable thing how England was ever able to produce Shakespeare. The father of him was only a man of marked culture. Sometimes a genius is developed by rare teachers, enthusiatic friends and good opportunities, but Shakespeare had none of these advantages. He lived amongst friends whose fame was already half established, and soon he thrust himself over their heads and shoulders. If one wants to know detail of the life of him one must study the works of the poet. Sometime the age created the man and sometimes the man makes the age.

Shakespeare is not the creature of his time. His works seem to be written in the open street and the public tavern, so rich are they in slang expressions, snatches of ballads, and the wit and the humour of his time.

3. It will always somewhat of a marvel that England came to produce William Shakespeare. His father was a yeoman viz : a man who did not had a fine education in the youth. Sometimes a great man has had spendid opportunities which will display his talent or kindle the flame that flashes into genius ; but in this case the matter was an other one.

Shakespeare had neither rare teachers nor enthusiastic companions. It was not till when he already had got a great name that he surrounded himself with dear friends.

Sometimes the man makes the age, at other times, the age creates the man. No person up to this moment, ever has pretended that Shakespeare has produced his age. His works seem to have been written in the streets and in the public tavern rather than in the closet. His tragedies and comedies are full of the English life. Other writers have left their diaries, letters or memoirs but our Shakespeare has left nothing of this ; his life is in his works and his secret is there. Reading Shakespeare's work, we may see things with his eyes.

Foreign Language Teaching in Germany

Whatever we may think as to the ability and knowledge shown by the German children in their *written* exercises, and I, for one, appraise them highly, there is,

I think, no doubt that, in their power of understanding the spoken foreign language and reproducing it *orally*, they are far in advance of English children. To what can this be due? An easy explanation is racial difference, and several able German teachers, who had been resident in England, were as fully convinced of the German boy's superiority in language learning as they were of his inferiority in mathematics. But, even allowing for this, there are contributory causes for our own relative inferiority.

In the absence of official statistics as to curricula and time-tables from secondary schools, and an almost equal lack of uniformity and accessible information from our primary and middle schools, it is not easy to make very definite statements. Yet I think we may fairly say that the time given in Germany in the secondary school of the modern type is very considerably in excess of that usual in England. In their middle schools also, more time is given than in our higher grade schools, though in their ordinary primary schools the teaching of foreign languages is not undertaken at all. The number of German children supposed to be learning foreign languages is much smaller than the number of English children, and much of our disappointment with our own work may very well be due to the waste and inefficiency arising from attempting it under conditions which foredoom it to failure. Then there is another important difference. Whereas in England we have not yet discarded the notion that French must be taught by a Frenchman, German by a German, in Germany this conception finds no support.

In some of the German towns, teachers who have already won their spurs, who are known to be excellent and experienced teachers, and who desire to improve their knowledge of a foreign language by residence in the country where it is spoken, are allowed leave of absence for this purpose, retaining their salary, but paying for the services of a substitute. Such teachers as these are teachers of foreign languages in Germany.

English teachers in training, it is true, are allowed, in a few exceptional cases, to spend a third year abroad, but this is not by any means the same thing. They are students in training, beginners in teaching, and are not necessarily competent to teach the ordinary subjects of instruction. Nor are they old enough to look at the language from the point of view of the teacher rather than that of the learner.

There is another cause of German superiority. It is the very much greater attention to the grammar of their own language which is given in every kind of German school. It is still the view of some English teachers that English can take care of itself. Even were it true that an English boy from a good home would speak and write English well enough, he would lose that power of grouping and selecting which comes from a well-considered course of analysis and parsing, and which is so useful as a grammatical *schema* when foreign languages are taught. It is no longer possible in English primary schools, since the Code of 1900, to find English omitted and French taken, but thoroughly good outline conceptions of English grammar are still

rare among English school children. The better grammatical equipment in their own language must not be overlooked when estimating the differences between English and German school children in relation to foreign languages.

A more debatable, but frequently assigned reason for German superiority is the alleged adoption by German teachers of the "new methods." The truth is that these methods, whilst possessing brilliant advocates in Germany, also find there their doughtiest opponents; and the vast mass of teachers do not endeavour to confine themselves definitely either to the "newer" or "older" methods.

One or two points in connection with the teaching of foreign languages on the new system call for special comment. "You must connect the foreign word with the object which it signifies, and not with the already-formed concept of which the word in your own language is the sign," say its exponents. It might be argued that it is not well, say, to connect the English word with the German object which, often enough, differs from the English object more or less. But this argument shows either that the new method is not rigorously logical, or that, from practical difficulties, it cannot be carried out. A more serious objection to it may be advanced. After the conceptual attitude of mind has been attained, why go through the process of building up the concepts all over again, quite irrespective of the age, present knowledge, and capacity of the learners? It is admittedly lengthy and laborious, and it is doubtful, moreover, whether it is ever done, even if the attempt be made. This is only

one more case, in which modern educational method refuses to take advantage of knowledge and power already possessed, and tries to work *ab initio*.

The question of inductive grammar has also been much discussed. Some German teachers rather incline to teach grammar inductively from the reading lesson, but admit that, to make this possible, the reading lesson must be prepared with that deliberate object in view. But if this be thoroughly done, and the instances grouped in lessons which illustrate particular points, we tend to approach the old series of exercises which the new method so violently attacks, only with a change of name ; that is, what was formerly called an exercise is now called a reading lesson. One valuable difference arises from the fact that the term reading lesson emphasises the oral aspect, which we, at any rate, have so frequently overlooked.

But, as is usual in these controversies, each side makes valuable affirmations which the other side too rashly rejects.

Expressed popularly, we might say that, whereas the older school tends to forget that boys have ears and voices, and that languages are sometimes spoken, the newer school forgets that they have eyes and hands and some reasoning powers, and that languages are also written and read.

Another controversy arises as to the age at which foreign languages should be begun in the secondary school ? A little inquiry shows that the following propositions are held with equal certainty :—

1. One cannot begin too soon.

2. One should not begin until the mother tongue is mastered.

3. Any time lost at first is more than made up when one begins later.

4. One can never recover ground unoccupied during the earliest years.

I could not, however, find a single instance in which, with boys of equal capacity, under equal teachers, different plans had been adopted and tabulated results kept over a series of years. Of course one must argue from general principles, but they only point the way for observation and experiment, they do not render it unnecessary. In all probability America will lead the way in such inquiry. Germany is rather too closely regulated perhaps, and England, whilst beginning to awake to the need of education in science, does not yet believe in science in education.

CHAPTER XVI

OBJECT LESSONS AND SCIENCE

Frankfort. — Primary School. Class VII. — Object Lesson (*Anschauungsunterricht*). First School Year. Sixty boys were present, aged six and seven years.

A picture of a harvest field, with trees round it, hung before the class.

Teacher. What is this ? (pointing to a tree).

Pupil. That is a tree.

Teacher. What part of the tree is this ?

Pupil. That is the stem.

Teacher. By what is the stem surrounded ?

Pupil. The stem is surrounded with bark.

Teacher. What colour is the bark ?

Pupil. The bark is brown.

Teacher. What grows on the stem ?

Pupil. Moss grows on the stem.

Teacher. What colour is the moss ?

Pupil. The moss is green.

Teacher. What comes out of the stem ?

Pupil. Out of the stem branches come.

Teacher. What do we find on the branches ?

Pupil. We find leaves on the branches.

Teacher. What colour are the leaves ?

Pupil. The leaves are green.

Teacher. What is there here under the tree ?

Pupil. Under the tree are cows.

Teacher. What are they doing ?

Pupil. The cows are drinking water.

Teacher. What sort of tree is this ?

Pupil. That is an oak.

Teacher. What grows on it ?

Pupil. On the oak grow acorns.

Teacher. Who can tell another tree that grows in the forest ?

Pupil. The fir tree grows in the forest.

Teacher. What are found on the fir tree ?

Pupil. The fir tree has needles.

Teacher. What are the needles like ?

Pupil. The needles are sharp.

The picture was small, and the children in the back rows could barely see what was referred to. Several questions were outside the range of the picture. But the most marked point was the continued insistence on the proper order of the words in the answers. The inflected article gave trouble ; *der*, *dem*, and *den* were frequently confused, and the teacher deplored the "slang" which the children used at home. This was really a lesson in framing short and correct sentences. Our notion of object lessons—the actual manipulation and investigation of an object—is not the basal conception underlying these lessons. They are exercises in the correct use of language, and only incidentally lessons in observation.

Leipsic. — Primary School. Class VII. — Object Lesson. Forty-six children were present, seven and eight years of age.

The teacher held a flax plant in her hand. The lesson proceeded as usual by a series of questions and answers, the pupils being questioned in turn.

Teacher. What is this flower called ?

Pupil. That flower is called flax.

Teacher. Where does it grow ?

When does it grow ?

Pupil. It grows at the beginning of summer.

Teacher. When does it bloom ?

What parts are there ?

Pupil. There are root, stem, leaves, and flower.

Teacher. What kind of root has it ?

Pupil. It has a very small root with root hairs.

Teacher. What can you easily do ?

Pupil. You can easily pull it out of the ground.

Teacher. What comes out of the root ?

What is the stalk like ?

Pupil. The stalk is very thin and long, and easily bends.

Teacher. Where do the leaves grow ?

Pupil. The leaves grow all the way up the stem.

Teacher. Now look at this young plant, and now at this older one. Where do the leaves come off first ?

Pupil. The leaves first come off the lowest part of the stem.

Teacher. Now look at the flower ; how many petals has it ?

Pupil. The flower has five petals.

Teacher. How many leaves has the calyx ?

Pupil. The calyx has five leaves.

Teacher. Now I will crush the seeds. What will that show ?

Pupil. It will show that they are oily.

Then followed some questions on the use of flax.

On enquiry I found that at least four lessons would be given on the flax plant. Six hours a week were in this class devoted to object lessons, and from forty to fifty different subjects would be taken in one school year. This yields a total of about two hundred and forty hours or lessons in this subject, so that there would be four or five lessons given to each. A small school garden supplies some botanical specimens, but the teachers complain that they cannot grow enough of one thing to enable the children each to have a specimen. Certainly all these children could not see the specimen held in the teacher's hand clearly enough to give answers really dependent upon their own observation. The answering was plainly and articulately given, though, as elsewhere, somewhat loudly; and much attention was paid to the exact grammatical form of the answer.

Hamburg.—Primary School. Class VI.*b*.—Object Lesson. Second School Year. The children were seven and eight years of age.

The teacher proceeded to recapitulate a lesson previously given on moss.

Teacher. When does one like to be in the woods most ?

Pupil. In summer one likes to be in the woods most.

Teacher. What do we see there ?

Pupil. We see moss.

Teacher. What sort of plant is moss ?

Pupil. Moss is a very little plant.

Teacher. Where do we find the moss ? &c.

The lesson closed by a connected oral recital by a bright little girl which included most of the answers to the detailed questions asked throughout the lesson.

These early exercises in oral composition seem universal in Germany.

There seemed to be very definite answers expected and given to questions really of a very vague nature, but which, of course, were understood by the children in a very limited sense. These lessons, so often wrongly regarded as object lessons, impressed me by their resemblance to the books of question and answer, such as those of Mangnall, which once had so wide a vogue in English schools. In both cases, the information seems subordinate to the correct wording of the question and answer, and both, doubtless, give valuable exercises in the use of complete sentences. But object lessons, or lessons in perception, these German lessons certainly are not.

Hamburg.—Primary School. Class VI.—Object Lesson. Second School Year. Fifty-one girls were present, seven and eight years of age.

This again was really a language lesson on a picture. The picture was small and could not well be observed

in detail from the back rows, though it could be seen well enough for the recognition of parts already familiar.

Teacher. What can you see ?

Pupil. I can see a field.

Teacher. On which side can you see the field ?

Pupil. I can see the field on the left side of the picture.

Teacher. What grows in the field ?

Pupil. In the field corn grows.

Teacher. What can we see between the corn ?

Pupil. Between the corn we see flowers.

There seemed some hesitation over the exact form of this answer, so four children were required to give it separately and then the class repeated it simultaneously.

Teacher. What sort of flowers are the corn flowers ?

Pupil. The corn flowers look blue.

Teacher. What is on the right side of the picture ?

Pupil. On the right side is a meadow.

Teacher. What grows on the meadow ?

Pupil. Grass and flowers grow on the meadow.

Teacher. What is there over the field ?

Pupil. A lark is over the field.

Teacher. What has he in the field ?

Pupil. He has his nest in the field.

This sentence gave difficulty, the dative singular of the article being wrongly given. The home speech of the children, which seems to dispense with certain of the inflected forms, was held to be responsible for

these mistakes ; and this teacher, in common with other German teachers, gave, as a reason for the large amount of time given to mere language lessons, the necessity of correcting the home speech, and of replacing the various dialects by one homogeneous German language.

The lesson proceeded :

Teacher. What has the lark in the nest ?

Pupil. He has moss and feathers.

Teacher. When do the larks sing ?

Pupil. They sing in the spring at Easter.

Teacher. How long do they sing ?

Pupil. They sing for — months.

Teacher. What sort of a bird is the lark ?

Pupil. The lark is an industrious singing-bird.

The lesson closed with the simultaneous recitation of a little poem about the lark.

The whole formed an excellent lesson in language composition, but why should such lessons be called *Anschauungsunterricht* ? What training is there here in perception of the external world ? Would it be wrong to suggest that these lessons were introduced to perform one function, and have been gradually drawn, by the strong linguistic bias of the German teacher, into the accomplishment of another ? Such lessons could certainly be commended to our own teachers in infant schools and in the lowest standards of senior departments as introductory to composition, but not as object lessons.

Frankfort.—Primary School. Class IV.*b*.—Natural History (*Naturbeschreibung*). Fifty-two children were present; official age, nine years. Actually there were twelve pupils nine years old, seventeen pupils ten years old, eleven pupils eleven years old, and twelve pupils twelve years old.

This was a recapitulatory lesson on an apple tree.

The specimens were supplied, when used, by the children, who brought them to school.

Questions such as follow were asked :

What form has the apple tree?

How many different kinds of apples are there?

What can we make with apples?

What is round the apple?

Why has the apple flesh?

The answer required here was, "To protect the seeds," and not "For us to eat."

What is made from the juice of the apple?

Then followed a few questions on the fermentation of the juice and the preparation of cider.

These oral questions were answered by a few pupils only—only a few put up their hands to answer. At the close of the oral lesson a few complete sentences were written down from the teacher's dictation in a small note book.

The little children are required to answer in complete sentences, but this school does not, as is sometimes done, continue the practice with the elder children.

Frankfort.—Higher Primary (Middle School). Class III.—Nature Knowledge (*Naturkunde*). Forty-two girls were present, eleven and twelve years old.

Leaves and flowers were in the teacher's hands.

Teacher. What is this ?

Where does it grow ?

What is its name ?

What kind of leaves has it ?

(A technical word in answer.)

What does the word — mean ?

In what order do we find the leaves ?

Why are they placed so close together ?

Why are they placed alternately ?

(So that the sun can shine on them.)

What kind of stem is this ?

Which breaks more easily, a long or a short stem ?

Why does the long break more easily ?

What do you notice on the stem ? (Knots.)

Why has the stem knots ?

(So that it may not break easily).

Then followed a series of questions about the size and shape of the flower.

Then on the fertilisation of the flower by bees.

Which part does the bee move ?

How does he get in ?

What does he do when he gets in ?

Then a girl was chosen to stand up and give a complete account of the plant just dealt with. This plant, the white nettle, had evidently been examined before,

and though the teacher held a piece of stem with some flowers on, in his hand, these were only suggestive of what had been previously observed.

"Children can see wild flowers growing in the fields," the teacher said, "and do not need to have them in school." I am afraid that this puts too much trust in their aptitude and desire to observe these things.

Specimens of Foxglove (*Fingerhut*) were then given out—one flower stem on each desk.

The usual questions and answers proceeded :—

What is this ?

What colour is it ?

What shape is it ?

Where do the insects go ?

What shape are the leaves ?

What are they set with ?

Why are they set with fine hairs ?

What kind of a root is this ? (Only the teacher had a specimen with a root.)

What poison do we get from this ?

How is it used ?

Great attention was paid all through to the accuracy of the answers from a language point of view; *wegen* was used with a wrong case, for example, and a short excursus into the use of *wegen* with the genitive was made at this point.

The points of contrast with a similar English lesson were as follow :—

1. Much greater attention was paid to the linguistic form of the children's answers than with us.

2. The power of continuous questioning seemed more developed in the teacher, and there was no lecturing or continuous exposition.

3. Neither teacher nor pupils attempted to draw any part of the plant.

4. No dissection of the flower was attempted.

5. The ordinary naked-eye characteristics of the plant were treated of without quasi-learned references to cells, &c., which the children would not understand, nor, indeed, even realise perceptually.

Science Teaching

In one respect the German schools seemed markedly to differ from ours in a way which, to me, was unexpected. I have tried to show that, in number of subjects taken, the German schools are more reasonable than our own, and more time is consequently given to each subject. The scrappiness of English school work, generally speaking, is not found in Germany. Yet in one subject, the teaching of science (I speak of the primary and secondary schools, not of the universities or technical colleges), that very scrappiness is most marked on the German side. Imagine the boys in Standard VI. in an elementary school in England, studying heat, magnetism, frictional electricity, mechanics, and simple chemical processes, with special attention to the oxygen compounds; and in Standard VII., mechanics, sound, electricity and light, the principal chemical compounds, with special reference to practical life; and acquiring some knowledge of the principal minerals.

These requirements are in substance taken from the Hamburg syllabus. Two hours a week are devoted to the science work in Standard VI., and four hours in Standard VII. There are no laboratories for practical work; the science is demonstration-table science entirely.

Mr. Matthew Arnold, in 1865, was of opinion that the school work of the Germans in science was one of their least satisfactory achievements. I think it continues to be so. I find it difficult to realise that the admirable method of the German teacher in so many subjects, a method which often seems as though it anticipates difficulties, and sometimes unduly multiplies the little steps by which the pupils mount from point to point, still tolerates the hollowness of such an extended syllabus in science. The specimen lessons which I give show that a very wide field is covered, and that detailed knowledge is attempted under the various sections.

But, as in every case when I asked for the head master's opinion, I found a corroboration of my own view, that the syllabus was much too wide, there will probably be an alteration ere long. As to the advisability of practical work for the children, there was by no means the same unanimity; the bulk of the teachers were certainly against it. In any case the introduction of practical work would have an immediate effect in reducing the syllabus, as the superficial rush through many sciences would, of necessity, be discontinued.

Berlin.—Primary School. Class II.—Science (*Naturkunde*). Seventh School Year. Thirty-two girls present, average age, twelve years.

Physiology

A model of the eye, about 3 inches in diameter, was placed before the class.

Attention was first directed to the muscles and their work in raising and lowering the eyeball and in turning it inwards and outwards. No reference was made to any of the children's own muscles, which, in some sense, they can see, or, at least, feel in action; but that may have been because these references had been abundantly made in previous lessons.

Then, piece by piece, from without inwards, the parts of the model were separated.

The cornea was next dealt with and described in words.

In all cases questions were asked requiring short verbal descriptions as the pupils' attention was directed to each part; and, at this stage, a girl was selected to give a connected account up to that point.

Then the dark inner coat was shown and the iris, the hole in the iris, and the pupil; then the retina, whose composition was briefly described, of course without any anatomical nicety.

Then another series of questions was followed by a connected account from another girl up to that point.

The next step in the lesson dealt with a large dia-

gram showing the eye in section. The teacher named the parts, one by one, as before, and identified the lines in the section with the bodies in the model, though it is perhaps worth remark that the "lens" was first pointed out on the diagram.

A third series of questions and a third connected account, given this time from the diagram, closed the lesson.

The first thing which impresses an Englishman in a lesson of this kind is the care with which each part is questioned on, before the teacher proceeds further, and the command of himself and the class, which enables the teacher to treat in an adequate way just the amount of work which he purposed.

So far, excellent; but what a neglect of the greatest possible aid in a lesson like this, namely, the children's own drawing! For what had the children attempted to learn? Not physiology, but the shapes, colours, relative positions and names of the parts of the eye. Now, short of dealing with the model themselves, nothing could give the children for such a purpose so valuable an exercise as drawing and colouring. A lesson thus given, coupled with naming, would probably have left an abiding impress which verbal description would not ensure. Strongly as I have tried to oppose a theory of teaching which neglects language and tries to make all knowledge perceptual, it is surely possible to err on the other side, and use verbal description where drawing would be better.

The model, be it noted, would not work, *e.g.* the lens would not throw images on the retina; so that

the lesson was not physiology, and the question might very well be raised as to the advisability of giving such alphabetic knowledge at all in subjects of instruction which time prevents from being pursued beyond that stage.

As an exercise in the ready and grammatical use of language the lesson was admirable, but to the newer English conceptions of teaching science it could hardly appear scientific. Much, doubtless, depends upon the fact that, in German schools, the science is *de omnibus rebus*, and that the merely "nomenclative" attitude is forced upon the teachers. With two hours a week for science, and something to teach about the whole realm of nature, it is not to be wondered at that they give little but names and phrases; it is surprising that they can give so much.

Berlin.—Primary School. Class II.—Science. Seventh School Year. Fifty boys were present, official age, twelve to thirteen.

A model of a common pump, about 20 inches high, stood on the teacher's table, and the first part of the lesson was given to the naming and verbal description of the parts, elicited by the usual method of question and answer. The answers were required to be in complete sentences and grammatically correct. The teacher, so far as his emphasis was concerned, seemed more distressed by such mistakes as *dem* for *der* than other kinds of inaccuracy.

The next section of the lesson dealt with the weight of the atmosphere. The usual experiment with quick-

silver in a tube closed at one end showed that 76 centimetres of mercury was supported by atmospheric pressure.

Now, said the teacher, since quicksilver is 13·6 times heavier than water, what is the weight of such a column whose base is a square centimetre ?

The problem was worked on the blackboard thus :—

$$\begin{array}{r}
 76 \text{ grammes} \\
 13\cdot6 \\
 \hline
 76 \\
 228 \\
 45\cdot6 \\
 \hline
 \underline{1033\cdot6} \text{ grammes.}
 \end{array}$$

It is interesting to note that the multiplication proceeded from the left end of the multiplier, contrary to our usual custom.

Teacher. How many kilogrammes is this ?

The question was answered, but not at first correctly ; the decimal system is harder for children than the metric reformer thinks.

Then followed a series of good questions on the pump :—

What happens here when we lift the piston ?

Where does the atmosphere press ?

Answer. On the water outside.

Where is that pressure transmitted ?

Why is this ?

All these questions were good, and were answered by some of the pupils, but I wondered what kind of result we should have had if the boys had been asked to give in writing, without aid from the teacher's questions, a reasoned account of the working of the common pump.

Leipsic. — Primary School. Class I.*a*. — Science. Twenty-one girls were present, thirteen and fourteen years old.

The science room was a galleried room with a demonstration table. The room could be darkened, and was darkened on this occasion, as the lesson required the reflection of a beam of light; the usual mirror and pointer apparatus was used.

Questions were asked as to each piece of apparatus, and were answered in complete sentences, but when the vital point of the lesson was reached there was much difficulty in getting answers. "The pointer bisects the angle which is formed by . . . ; at this point the answers were not forthcoming, and when the rule of reflection was required there was similar difficulty.

"Girls do not learn geometry and mensuration," said the rector, "and so find this very hard." I thought so too, and, when I found that they were required also to learn the elements of botany and physiology as well as of physics, I was not surprised at their failure. The physiology seemed to be taught largely by means of lantern slides, with diagrams

crowded with names. I found that the teachers were fully alive to the unwisdom of attempting so wide a course, though they did not, as a rule, receive my suggestion of practical science rooms very enthusiastically, the general opinion being that the children would just waste their time.

The equipment with natural history specimens was as costly and as abundant as with other science apparatus; and I felt, when I saw it, like a celebrated history professor when he read some examination questions in history, and wondered how many of them he could answer himself.

Hamburg.—Primary School. Class I.a.—Chemistry.

Forty girls present, thirteen and fourteen years of age. Many of these girls were big and womanly, strikingly so to an English eye, accustomed to the girls of thirteen and fourteen in London schools.

The lesson proceeded on the usual German method of question and answer, though the answering in science was very far from exhibiting the confidence shown in other subjects.

The teacher talked much about a model which was not there, and exhibited apparatus by gestures, but did not draw it. His voice was low and distinct, and the attention of the class perfect.

I give the heads only of the lesson, which was on iron, with a view not of exhibiting method, but showing the ground covered.

Iron

1. Where it is found.
 - a. In Germany.
 - b. In other European countries.
 - c. In America.
2. Quantity from each source given above.
3. What it is found with.
4. What its uses are.
5. Chemistry of iron.
 - a. The chemical compounds in which it is found.
 - b. How the metal is obtained.
 - c. Some common compounds of iron, *e.g.* rust, —what it is, and how it is formed.

This section was illustrated by the exhibition of some rusted articles.

Berlin. — Primary School. Class I. — Science : Chemistry and Mineralogy. Thirty-seven boys present, official age, thirteen and fourteen.

A specimen of felspar was shown and its composition was asked for. Silicate of alumina was referred to, and some formulæ were given. In the case of compounds the teacher asked for a short description of each component, and then asked how they were combined.

The next section of the lesson dealt with the reduction to aluminium. A clear diagram was hung before the class, and one of the boys gave a continuous verbal account, pointing out the steps in the process.

Answers to the teacher's questions were given in well-phrased sentences ; one of these ran :—"The high temperature causes dissociation. And on the anode we get the oxygen ; on the cathode the metal."

The lesson at this point became a series of questions on metals generally :—

Teacher. Name the principal light metals.

Pupil. Lithium, sodium, potassium, calcium.

Teacher. What is a noble metal?

1st Pupil. A noble metal is one which will not melt.

Teacher. No, that is wrong.

2nd Pupil. A noble metal is one which does not oxidise.

Teacher. Give examples.

Pupil. Gold and silver.

Teacher. Now name some heavy metals.

Pupil. Copper, iron, and lead.

Then a series of questions on the smelting of iron, which were well answered, led to a few words about the Iron Age, which introduced the Bronze Age and the Stone Age. A good box of mineral ores was available for exhibition during the lesson, but, as will be seen from the above notes, very little reference to it was necessary.

In Germany, as at home, I never hear a lesson of this kind without feeling extremely uneasy. The names seem to me, so often, little more than unmeaning marks to which nothing real is attached. A little science coupled with problems and exercises seems to me much more likely to be of value than this wide survey, resulting, as it probably does, in a super-

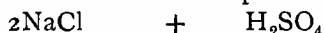
ficial verbalism. These criticisms, however, it must be understood, apply to the syllabus and method, not to the giving of the lesson.

Hamburg. — Primary School. Class I.*a*. — Science.

Forty-nine children present, thirteen and fourteen years of age.

There was a good supply of bottled minerals on the demonstration table, and the teacher was giving a lesson on the preparation of hydrochloric acid. The names and formulæ of the substances used were written on the blackboard thus :—

Sodium chloride and sulphuric acid.



The teacher asked a series of questions of which the following are typical :—

What does sodium chloride consist of?

What is natrium?

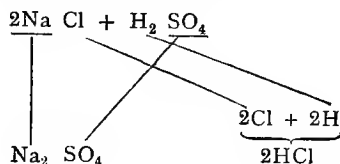
What is chlorine?

What does NaCl mean?

How many molecules are represented?

How many atoms (1) of natrium, (2) of chlorine, are there in each molecule?

Then, with the aid of the teacher, the pupils worked out the reaction in the way suggested by the following diagram :—



A complete account of the preparation was now asked for. A pupil, selected to answer, began thus :—

To prepare hydrochloric acid we require common salt and sulphuric acid. These are placed in a flask. The formula for one is NaCl and for the other H_2SO_4 . The chlorine joins with the hydrogen; and so on.

Then questions were asked on the occurrence and preparation of common salt.

Where do we find it?

How is it prepared?

1. From sea-water.
2. From mines.

The process of letting water down the mines, and, after a time, pumping it up again, was described by the teacher, as well as the evaporation in shallow pans.

Meanwhile specimens of crystallised salt in a bottle and pieces of salt from mines were being passed round the class for inspection, whilst the teacher was teaching. This was unfortunate, as it naturally gave rise to divided attention.

Finally, the teacher showed a large picture of the operations he had been describing.

Leipsic.—Primary School. Class I.—Science. Thirty-six boys present, thirteen and fourteen years of age.

The room was fitted with a large demonstration table, and the seats raised one behind the other. This “stepping,” it must be remembered, is very rare in

German schools, and only to be found in the science room, which is not used for other purposes.

The lesson dealt with vibration.

A number of suspended pendulums hung on a horizontal bar, and these pendulums could be set free to vibrate one after another.

The children were required to observe the relation between the length and rate of swing in a roughly quantitative way.

Then another row of "bobs" was shown, with their strings clamped across by a slanting bar, and similar observations were made.

A third piece of apparatus illustrated sympathetic vibration.

One "bob" was set swinging, and gradually a pendulum of the same length took up the vibration.

A modified form of the apparatus, which was the teacher's own invention, and which I was asked not to describe, as it was not yet "in commerce," showed how, with different rates of pull, different lengths of pendulum were set in vibration.

Then vibrations of pipes and tuning-forks were dealt with. The familiar expedient was adopted of finding a pipe length which will vibrate to a given tuning-fork by raising or lowering a glass tube in water.

It was, as a demonstration lesson, excellent, but I thought it might have been better, if the pupils could have handled the apparatus, and, making their own measurements, have tried to educe the prin-

ciples therefrom. It must, however, be admitted that the children did seem to grasp the aim and result of the experiments, the lack of this being often the weak point in our own experimental classes.

Leipsic.—Primary School. Class I.*a*.—Science: Physiology. Boys, thirteen and fourteen years old.

Exposed before the class was a chart showing the structure of eye, and ear, and skin. The usual oral questioning commenced the lesson; the children stood in turn (a very frequent practice in Germany) before the question was asked. I invariably received the same answer when asking why the question was not asked of the whole class and one pupil selected to answer. "Our method ensures each boy getting a question," the teachers said.

Teacher. What is this structure?

Pupil. That is the epidermis.

Teacher. What are its qualities?

Pupil. It is hard and thick.

Teacher. How do we know that?

Pupil. It is hard to stick a needle in.

Questions on the hair and other epidermic structures followed these, *e.g.* :—

Teacher. What does the hair not have?

1st Pupil. The hair has no blood.

2nd Pupil. The hair has no feeling.

Teacher. How then does the hair grow?

Then came questions on the glands in the skin, and at this point a plaster model was shown, and, after a

little description, the questions and answers on this section proceeded afresh.

There was no drawing either by the teacher or pupils. It is not easy to describe structures and their position by means of verbal description only, nor is such description very definite, even when all is done that words can do.

There seemed the same insistence on a well-turned sentence as in the object lessons; and the notion, abundantly recognised in the universities, that science requires first-hand observation, obtained little recognition; nor were the questions themselves always exempt from the charge of mere verbalism; for example :—

Teacher. Where are the nails ?

Pupil. The nails are on the fingers and the feet.

Teacher. What do they cover ?

Pupil. They cover a part of the finger.

Teacher. Which part of the finger do they cover ?

At the close of the lesson the teacher dictated a few of the hard words and two or three leading sentences, which the pupils wrote down in their note books. These note books they always keep with them, and from time to time learn their contents at home.

Frankfort.—Higher Primary (Middle School). Class II.—Science (*Physik*). Ages, fourteen and fifteen.

Questions on the laws of pendulum motion were asked by the teacher.

Who discovered the law of pendulum motion ?

Suppose we have a pendulum suspended here, said the teacher, showing a swinging bob on a wire frame with a wooden base.

Then, setting the bob swinging, the teacher twisted the base. How does the bob swing now? he asked.

Who has seen a Foucault pendulum?

The boys were not very clear on this.

A fairly plain piece of clockwork was now produced, having a pendulum with movable bob.

The bob was moved up and down, showing the difference in the rate of swing with the length of pendulum.

Then a considerable number of boys were asked to define a seconds pendulum.

Ans. A seconds pendulum is one which makes a single swing in one second.

The teacher, I thought, might have worked out the formula, or at least have approximated to it, by a series of simple quantitative experiments, and then worked problems, the formula being supposed. He said, however, that the boys, knowing no algebra, did not understand squares and square roots, and consequently could not do this.

Demonstration and exposition by questioning, with much attention to the precise linguistic form of the answer, were the keynotes of method in this lesson.

Berlin.—Secondary Modern School. Class II.—
Physics. Thirty-four present, fourteen, fifteen,
and sixteen years old.

German school science is almost purely demonstration-table science. The specialistic research work for which German university students are so famous is not, even in the most modified sense, a feature of their secondary schools.

This lesson was demonstration coupled with explanation by the teacher. As usual with secondary teachers, the question and answer form, practically universal among the primary teachers, was not adopted, and the rate of speech was very much quicker.

The lesson started with a verbal description of an air-pump, carried out entirely by the teacher.

The following experiments were made by the teacher—

1. The air was exhausted from a long glass tube, which was then placed under water. The pupils were to note the water rising in the tube.

2. (a) Air was pumped out of a very long tube; then it was shown that "paper" and "metal" fell together. (b) Air was allowed to enter—"paper" fell much more slowly than "metal."

3. Some quicksilver was placed in a vessel above a cylinder placed on an air-pump plate. The exhaustion of the air brought the quicksilver like a fine rain through the finely-divided partition which separates it from the cylinder.

4. A bell was rung under the exhausted receiver.

The lesson was a lecture illustrated by experiments ; the teacher was talking almost all the time, and the share of the pupils, otherwise than as observers, was small. The lecturing method, which has, perhaps, too completely disappeared from the primary schools, is in full force here ; but one must add that the questions, of which few were asked, were always real questions.

The lesson was purely qualitative, no measuring of any kind being resorted to.

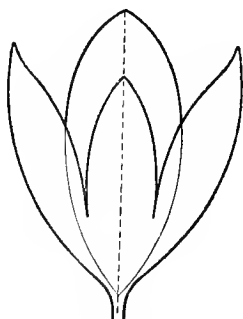
CHAPTER XVII

DRAWING

Frankfort.—Primary Girls' School.

Two hours a week were given to drawing. No geometrical or model drawing was done, nor was there any drawing from nature.

Drawing in this girls' school might be described as a preparation for embroidery. The preliminary steps

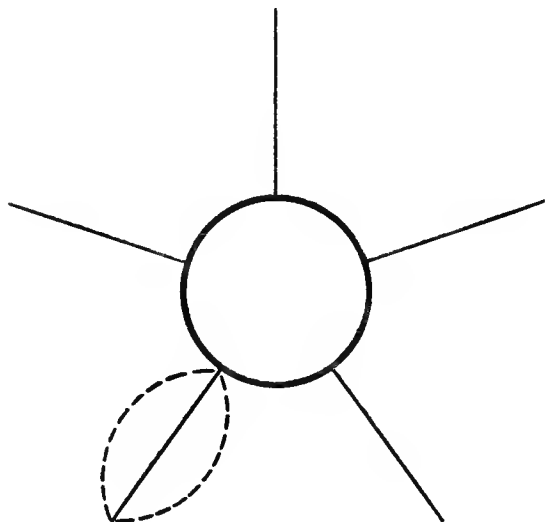


were well done—the development of a simple bud into conventional ornament.

Then this conventional bud was repeated, and arranged round a circle. (See diagram on p. 232.)

Some four or five hours seemed to be required, even by the best pupils, to finish the drawing. The best who finished were allowed to colour the drawing with crayons.

The freehand drawing was very good in this school ;

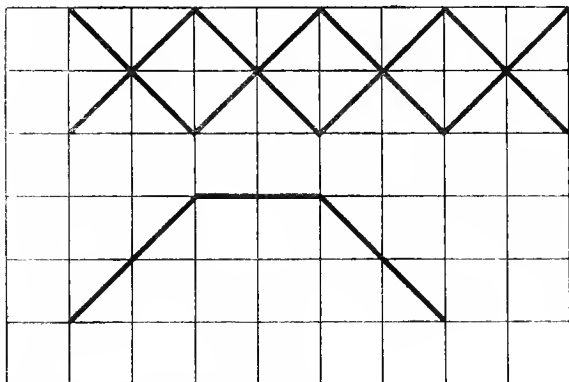


the teacher was enthusiastic, and much of the embroidered work which he showed me was extremely good, as far as I was able to judge.

Hamburg.—Primary School. Class V. Children, eight and nine years of age.

Each child had a drawing book consisting of

squared paper, with squares of one-third of an inch size.



The teacher was demonstrating on a squared black-board, and was drawing and describing each line separately. Whereas our teachers are principally concerned to obtain accurate drawing, the teacher here described in words, and required the children to describe each line before it was drawn ; for example, "This is a straight line of single length, and passes from the top left corner of the square to the bottom right corner."

The children were required to give an account of this kind before drawing the line.

Then the line was drawn by the class, and the teacher took up the next point.

Two hours a week were given to this geometrical drawing, and an inspection of the books showed the work to be well and neatly done, as might very

reasonably be expected of children at the age of eight or nine. They were, moreover, allowed to move their books so as to draw in the easiest position. This is not permitted by English methods.

The teacher was aware that educational reformers in Germany were endeavouring to remodel the teaching of drawing. He said that they were rushing violently from the too easy to the too hard. Children were to be required to draw at once from nature without a preliminary training in lines and distances and curves. "In fact," said he, "we are going to adopt the English system." I agreed with his criticism, but assured him that the best English teachers did not by any means neglect an analysis of lines and curves and measurements, as he had been led to believe.

Leipsic.—Higher Primary School. Class II. Thirty-two boys present, twelve and thirteen years old.

Each boy was drawing at a separate desk. A wire cross about two feet high was hung up in one corner of the room. Without exception, the cross was being drawn as if each pupil was exactly in front of it, the horizontal arms being drawn horizontally, and the edges showing thickness being obtained by a sort of perspective construction. This latter is not unknown in our own schools, but it is worthy of mention here, because the distinction between model and perspective does not seem clearly marked in German schools, even in theory. The bottom edges

of the upright arm were above the eye of every member of the class, yet were being drawn as if below. I was told that the wire cross was suspended for the weaker pupils only, the others could draw without it. This was a curious antedating of memory drawing; which is good in itself, but which presupposes accurate drawing from what is seen, and cannot supplant it.

Another and lower section were drawing a cube, but did not know that verticals always appear as perpendiculars.

Each desk had a small platform before it which could be raised or lowered, and which was constructed to support the small wooden models, about $4\frac{1}{2}$ inches long, of which the cupboards contained an abundance. But in this school it was duly recognised that these little models placed so close to the eye (about 18 inches) were unsuitable, and the pupils drew large models, which were placed out before the class as a whole.

Berlin.—Primary School. Classes I. and II. Seventh and Eighth School Year. Official age, twelve, thirteen, and fourteen.

The drawing lesson was being taken in the hall. The teacher was very anxious that I should see the best of a number of drawings which had been retained from various classes. There were many good drawings in chalk from objects, *e.g.* cigar boxes. And many of the coloured drawings were noticeable for subdued

tints and harmonious blendings. This is rather unusual in Germany, where the colours in the school painting seem often, to our taste, crude and violently contrasted. I noticed that the drawings called nature-studies were built up on very regular forms; they were conventional in a good sense perhaps.

The same lack of distinction between model and perspective drawing was obvious here as elsewhere.

The drawing from models commences in the second term of the second class, that is, at about the age of twelve and a half years.

Before each desk was a little stand or platform which could be raised and lowered, and on this platform each boy stood his own model. Cubes, right prisms, hexagonal prisms, and cylinders were in abundance. Each was cut out of a block of wood, and measured about six inches in length. Eighteen inches would be the greatest distance from the eye at which the model could possibly be situated.

One of the best boys was set to draw a box about a foot long, and I watched his drawing carefully. I was unable to find any systematic plan of procedure, but it may be that the boy, who was one of the best, had got beyond the more elementary steps and processes.

The teacher thought that the method of the small individual model was good for one boy, but ill adapted for class teaching. He agreed with me, however, that it was very difficult to see the "slopes" of such short lines, and that even to note the differences in their

apparent length was very hard, as they were so small ; and that children would do better with large models set farther away from them.

It seemed very strange that, whereas in other subjects, demonstration and teaching, the elaboration of method and the analysis of processes, were so admirably done, sometimes overdone, yet in drawing there was little teaching, and a very slight advance on the old method in which the pupil blundered along as he best could, and the teacher gave an occasional objurgation, and "touched up" the drawing as he came round.

I thought myself that the teaching of drawing had, perhaps, become too specialistic, and that in the hands of the trained class teacher better methods might have been employed and better results have been obtained. I understand that in some German towns the teachers of drawing are first of all trained teachers, who afterwards specialise in drawing, but that in others the teachers of drawing specialise from the first. I regret that I was unable to get any clear evidence as to the differences in method and result which probably follow from this.

Berlin.—Primary School. Class IV. Fifth School Year. Official age, ten and eleven ; forty-five pupils present.

Each pupil had a geometry book in which, page by page, the development of the common solids was shown.

The first was the cube, thus—

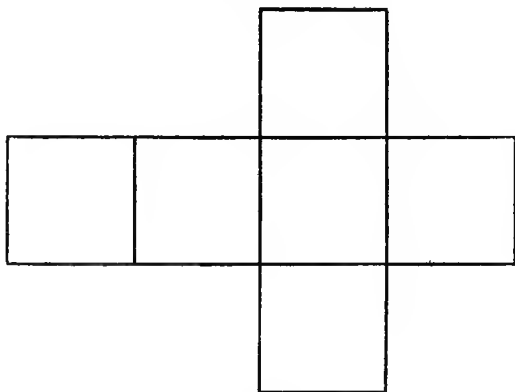


FIG. 1

The next was the square-based prism—

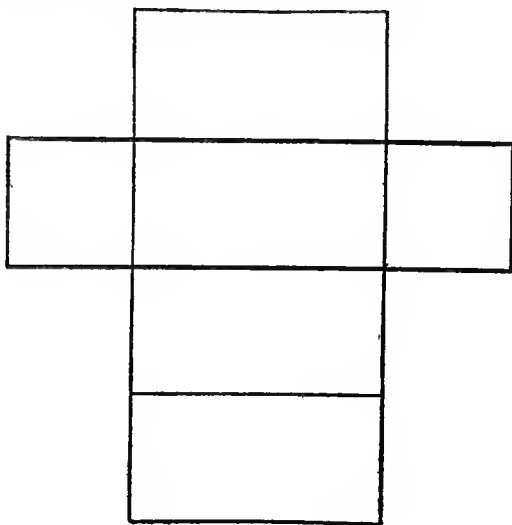


FIG. 2

The third was the square-based pyramid—

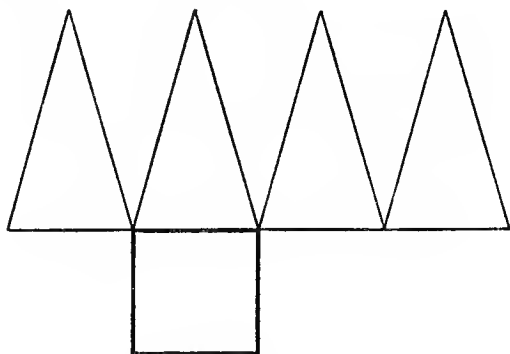


FIG. 3

The fourth was the cylinder—

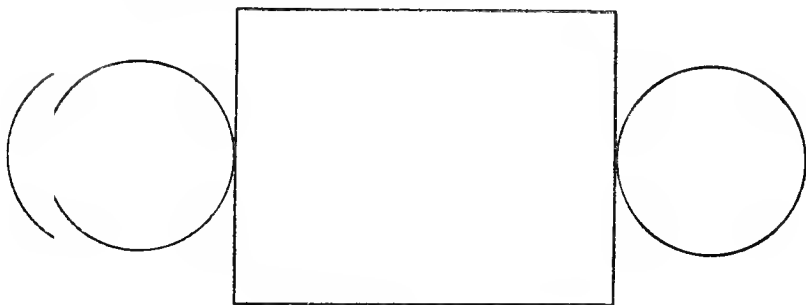
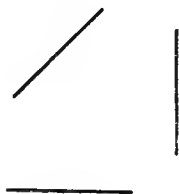


FIG. 4

The pupils were expected to copy these on stout paper or cardboard, and to cut them out and construct the solid bodies at home.

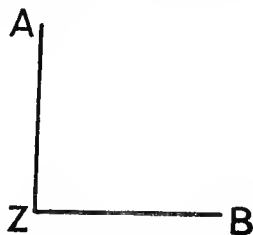
Another section of the book was given up to lessons on linear forms.



The book contained a capital syllabus of instruction in geometry, all of which was done, step by step, with the teacher, in a systematic and continuous way. But I could find no independent exercises, no problems in geometry given to the children to work without assistance and guidance.

The lesson proceeding was one upon angles. A

boy was required to draw a right angle on the black-board. This was done and lettered—



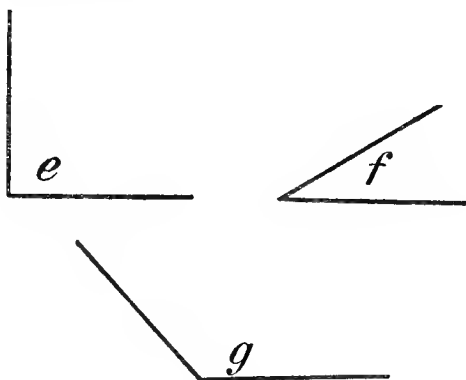
Teacher. How do we name this?

Pupil. We name that angle AZB.

Teacher. Why do we not name it angle ZAB?

Now draw three angles on the blackboard.

This was done thus :—

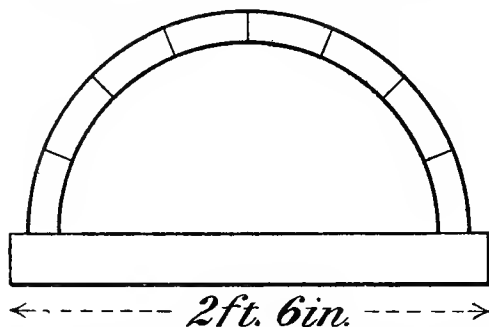


Teacher. Which angle is the greatest?

How could we prove this?

Pupil. We could measure with the protractor.

This was produced and applied to the angles.



Teacher. How many degrees have we here? In what other way could we measure these angles?

Pupil. By drawing circles from the corners and measuring the arcs.

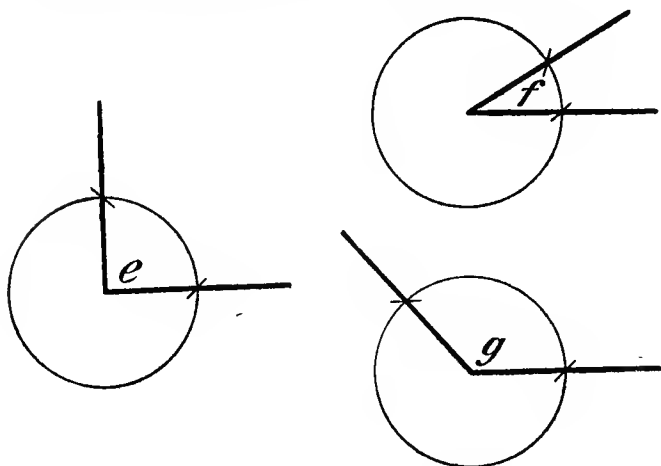
Teacher. What kind of circles must you have?

Pupil. The circles must all have the same radius.

Teacher. Show how we do this measurement.

One boy stepped out and

1. Drew the circles; 2. Measured the arcs.



The most noticeable differences in the teaching of elementary geometry from that most common in our schools were:—

1. The systematic attack of the subject.
2. The slow, step by step, progress.
3. The verbal description of lines, angles, &c.
4. The much smaller amount of solution of problems by the pupils.

Hamburg.—Primary School. *Selecta* (Standard Ex-VII.). Thirty-seven girls were present, of thirteen and fourteen years of age; a few of fifteen years were staying at school longer than usual, intending subsequently to become teachers.

Most of the girls were working at a freehand copy containing circles; these were drawn with compasses, nor did there seem any restriction upon measuring distances. There was, apparently, no class teaching; but the teacher directed the attention of the children to individual faults as he passed round the class, in a manner reminiscent of some professors of drawing in private schools.

Two of the girls were drawing little wooden models, about 4 inches long by $3\frac{1}{2}$ inches wide, placed upon a pedestal from 12 to 15 inches from the eye.

Model drawing under such conditions is impossible, except to those who are already highly trained; but there is little need to dwell upon a method which, I understand, is now generally condemned in Germany, and which is about to be superseded.

It would be interesting to see, if possible, why drawing in Germany should suffer so much from under-teaching; thus standing in striking contrast to other subjects, such, for example, as arithmetic, which suffers from over-teaching; over-teaching, indeed, being the general characteristic of German schools. It would be valuable, moreover, to trace the origin of the unusual defects in method which have characterised the German teaching of drawing.

Hamburg.—Secondary Modern School. Class IV.

Forty-three pupils present, of twelve, thirteen, and fourteen years of age.

Two hours per week were given to the subject. No geometry was taught, the syllabus was mainly freehand, with some model drawing.

The pupils in this class were at different stages of progress. A few were working from plaster casts, and many were making elaborate copies in design: this takes a very long time, and does not lead to rapid, accurate sketching, which would probably be more valuable. The colouring was very crude, and the general range of violent contrast inclines me to believe that, age for age, the colour sense of the German is more primitive than our own. This would be an interesting problem for the comparative psychologist.

There was no drawing from Nature in this school. In other schools I had noticed little separation between perspective and model drawing. Here there was little separation of freehand from ruler work, for I saw that boys measured their freehand copies with

rulers and then marked off the dimensions on their papers.

I saw no plotting out of the freehand copies with the aid of construction lines drawn freehand, which is so marked a feature of our own drawing methods, and which to me seems vital if the general proportions are to be correctly copied.

Lines for "blobbing" were drawn with a ruler in some cases, and designs were marked out with the ruler's aid.

There was little, if any, class teaching of drawing; occasional help to the individual pupil seemed the rule.

Berlin. — Secondary Modern School. Class II.

Twenty-two boys present, average age, fifteen years.

The lesson was on solid geometry.

The teacher was a training college teacher, and there was much verbal description, by the usual question and answer method, of the lines and planes involved.

I was permitted to see the syllabus and many of the pupils' exercises, present and former.

The course I should regard as equal in difficulty to that required for Science Subject I. (South Kensington Directory) Elementary Stage.

The plans and elevations of lines were being dealt with and their projection from one plane to another. Nothing but praise can be given for the neatness and accuracy of the exercises. The test of problems worked unaided by the boys was not available.

Berlin. — Secondary Modern School. Class II.
Thirty boys present, fifteen and sixteen years of age.

Three hours a week are given to this subject in these secondary schools. It is begun in Class VI., when the pupils are about eleven years of age.

This lesson was a nature study. Each boy had some flowers or fruit before him which he had brought to school. A light pencil sketch was made first and then painted, though, in lower classes, the boys paint at once. There were many elaborate drawings in shaded model drawing, but some of the model drawing was wrong, even in that which was exhibited as commendable. The teacher agreed with me that the colouring was extremely crude, violent contrast being much delighted in. There seemed to be little method and collective teaching in drawing, the individual boy working independently and subject to the occasional visits of the teacher. This strikes one as strange in Germany, where didactic method is so much, and generally so admirably, attended to, being perhaps, if anything, somewhat over-emphasised.

The importance of memory drawing was recognised and some of the best boys were asked to draw for me

a. A candlestick.

b. A helmet.

c. A wine-glass.

d. A tall hat.

The teacher was disappointed, and I think he had reason to be, but we should not rashly conclude that our own memory drawing would be, as a rule, much better.

Hamburg.—Secondary Modern School. *Secunda*.
Average age, about seventeen years.

The same methods of teaching drawing prevailed as in the primary schools. Each boy had his individual copy, and the teaching was principally given in the few minutes' individual attention to the pupil as the teacher passed round. There were the same little wooden models and little tin pots and kettles only a few inches in size, from which the pupils were required to draw. But in this school I saw plane and solid geometry of a high order of excellence. The solid geometry book seemed a very good one.¹ A review of the best work done showed the usual prisms and pyramids with sections, the projection of lines, shadow projection, and the projection of lines and plane figures on oblique planes. The drawings were extremely neat and accurate.

This was an optional subject, and the school, presumably, was specially capable of, or specially interested in, the teaching of this subject ; in any case, this projection work was of a very high character. The difficulty of the work was rather above that required for Stage I. of the South Kensington Syllabus (Board of Education, Secondary Department).

¹ *Darstellende Geometrie*. Schröder, Darmstadt.

CHAPTER XVIII

PHYSICAL EXERCISES

Hamburg.—Primary School. Classes IV.*a.* and IV.*b.*
One hundred girls present, ten and eleven years
of age, under the charge of two teachers.

The discipline and order were everything that could be desired.

A number of simple arm and leg movements were well done, and I was particularly interested in the fact that the girls kept together in their marching and halted together, and on the same foot, without the noisy stamping which is so noticeable in many of our primary girls' schools, and in some German schools.

In this standard *Reigen*,¹ which the unsophisticated might call dancing, was commenced. Forwards and sideways movements, with dance steps, and the formation of simple figures, were of interest to me and a source of pleasure to the girls. But it was not well done, and the head teacher told me that this class was only just beginning, and that the girls found the *Reigen* very difficult. I had been told this before, and should certainly have thought myself

¹ It might be of some service to English teachers of physical exercises for girls if a translated copy of *Reigen für das Schulturnen* ("Figure-movements for School Exercises"), by A. Herman, with 144 figures, published in Berlin, 1894, were available for use.

that, if brilliant work could not be obtained under such discipline, the trouble must lie in the nature of the work itself. I very much regretted that there were no corresponding movements in our English systems to permit of comparison.

In this school drill-hall I saw little apparatus. There were, indeed, four sets of swinging rings, but their actual use by individual children must have been small in amount.

Leipsic.—Higher Primary (Middle School). Class III.*b*. Twenty-seven boys present, eleven and twelve years old.

The extension motions in open order were so like many of those in vogue in England that a more than superficial glance would hardly have seen much difference; there were the same combinations of leg and arm movements and the same repetition of movements. I thought that the precision and accuracy were slightly above our own average, but, as might be expected, were not within range of the style displayed in the Albert Hall in the annual exhibition. The marching I thought inferior to the other work; but we must remember that there is little, if any, military drill in German schools; neither the teachers nor the army authorities wish it; nor does the German school-boy march in and out of class in the same orderly way as in our country. Judged by our primary schools, it is we, and not the Germans, who would be thought a military nation.

The work with apparatus is much in excess of our

own. Here, in the playground, with leaping board and loose bar supported by two graduated uprights, the boys followed each other in leaping practice, the limit of height for the third class being 90 centimetres. Two hours a week are given to drill and gymnastics (*Turnen*).

Hamburg.—Primary School. Class II. About fifty girls of twelve and thirteen years of age were drilling together.

The marching was not very dissimilar from that in English schools; and, as in our own country, it seems to be accepted that girls cannot and ought not to march without stamping, though our boys, and I think rightly, are required to do so. The turning movements were unlike our own, and more nearly resembled a little jump round than a pivoted movement.

At my request the girls exhibited a number of steps and movements; some were hand in hand, which I should have called dancing, but, as in Frankfort, where I saw this previously, these movements were called *Reigen*. One movement seemed to me unmistakably a schottische. The figures were in some cases complicated, and much "brain" was required by the pupil, said the head teacher, and good disciplinary power in the teacher.

An extremely interesting question arose as to the relation between physical dexterity and success in the more difficult school studies; but the head teacher, whilst being of opinion that the cleverest

girls did best in the drill, had kept no exact observations on the point.

Then followed dance movements accompanied by singing, and some pretty and attractive movements with large rings.

All this work was extremely good ; in fact it was but little removed from the excellence of the annual display at the Albert Hall given by the London School Board ; and was much beyond the ordinary class work of the majority of our schools.

There is little hostility to apparatus for girls. This drill-hall contained three ladders—horizontal, vertical, and oblique—six vertical bars and horizontal bars. Ten girls could thus be employed at once, the remaining girls awaiting their turn. The girls seemed to me more mature and stronger, age for age, than the girls in London Board Schools, and, though there was little grace of movement in the gymnastics, there was much of robust, if somewhat rude vigour. It must be remembered, however, that climbing up a pole or going hand over hand up a ladder is not likely to be graceful unless done with perfect ease, which it would have been ridiculous to expect.

One great point of interest lies in the German attitude towards fixed apparatus. The question of physical education for girls has received very careful attention in England as well as in Germany ; but we have, so far, deliberately excluded apparatus from primary schools. Is this difference due to a difference in ideal ? I think not. Does it depend on a different estimate of the facts, or are the facts different ? I am afraid that I can do no more

than direct attention to the questions. In this case as in education generally, we have in this country no body of evidence as to growth and development to which we can make appeal, quantitative experiment under exact conditions being almost entirely lacking.

Berlin.—Primary School.

The drill-hall was used first by the highest class girls.*

Thirty-two were arranged in fours on the circumference of a circle. They went through some very complex movements in a precise manner, which, however, suggested that frequent repetition had tended to boredom. The teacher counted and gave directions which were quite unnecessary, as it was obvious that the movements, which were few, had been done so often that the girls could go through them with no instructions whatever. There was a very pleasant absence of stamping.

The hall was then occupied by the first class boys, who marched both in and out singing a patriotic song.

Their drill movements were excellent and quiet, though there was more noise of feet than with the girls, and they marched with a rather accentuated lift of the leg. The teacher was calm, and gave his orders in a low, clear tone; and the boys listened with obvious attention to commands which were by no means short and simple, and carried them out without a fault.

School Games in Germany

The importance of games in school life is receiving year by year increased recognition in Germany, and the reproach so often levelled at the German schoolboy, that he is physically inert and incapable, if ever it were applicable, is becoming less and less so. The rector of a higher modern school in the suburbs of Hamburg took me with pride to the great playing field attached to his school, where a football match was in progress. I rejoiced to think that here, at any rate, the English schoolboy was not behind.

Frankfort.—Swimming

At this time of the year, summer, the boys spend three half-hours per week at the bath. Each visit takes an hour of school time.

The boys looked well when stripped; there were no signs of the spectacted degeneration which popular literature ascribes to the German boy.

Teachers of the school do not teach swimming, though they accompany the boys to the bath. The teaching is done by the bath attendants.

The Municipality pays 16,000 marks annually for the use of these swimming baths, which are floating on the river Main.

School Baths

In one boys' school in the suburbs of Hamburg I saw baths in connection with the school and forming part of the school buildings. A trough, with an

arrangement for shower baths fixed above, and supplied with both hot and cold water, sufficed for the accommodation of thirty boys at a time. Bathing time came once a week, was not compulsory except to dirty children, but was very largely in demand. A total of twenty-five minutes was occupied from start to finish, and no allowance was made for this reduction of time to other subjects. The head teacher informed me that this school bath was the only one in Hamburg, was very expensive, that it was built as an experiment, and that results would be expected in improved physique.

No periodical weighings and measurings were made, so that the basis for such judgments was not provided.

It is perhaps unwise to expect much, either of good or harm, from one bath a week ; but it is interesting to see that the German expects his educational experiments to justify themselves by results.

CHAPTER XIX

SINGING

Leipsic.—Primary School. Class VI.*b*. Forty-seven children, eight and nine years of age.

I was asked to see this class; the discipline was truly excellent and the teacher admirable. The work probably represents for children of this age the highest level attainable by a staff method. For my benefit the lesson was to be reading notes from the staff.

The staff was drawn on the blackboard.



Then the usual procedure of question and answer began.

Teacher. What is this?

Pupil. That is a "tone-ladder."

Teacher. What does it consist of?

Pupil. It consists of lines.

Teacher. How many lines has it?

Pupil. It has five lines.

Teacher. Where do we write the notes?

Pupil. We write the notes on the lines and in the spaces.

Teacher. What is this note ?

Pupil. That is number 1.

Teacher. Where does number 1 stand ?

Pupil. Number 1 stands on the first line below the staff.

Teacher. What is this ?

Pupil. That is number 8.

Teacher. Where does number 8 stand ?

Pupil. Number 8 stands between the third and fourth lines.

Teacher. What is this ?

Pupil. That is number 5.

Teacher. Where does number 5 stand ?

And so on.

This long preliminary questioning over, the children sang

<i>Eins</i>	<i>drei</i>	<i>fünf</i>	<i>acht</i>
1	3	5	8

(We say, doh me soh doh')

and these they could sing in any order, though with a little hesitation and some mistakes.

The method here was better than that frequently adopted of taking the whole scale first, and then missing the notes that were not wanted ; and though some German teachers think little of the method by numbers, the children seemed helped by them. I did not find subsequently that the numbers really served the same use as our modulator names, that is, the *eins*, for example, was not treated as a movable doh.

One point in which we might well imitate the

Germans is in separate singing by the pupils. A girl or boy called upon to sing just sang out, not always right indeed, but without that shamefaced hesitation we get so often in our children.

Leipsic. Class IVa. Forty-two boys present, ten and eleven years old.

In this class the boys took notes from the violin and sang octaves above and below. There was much practice of *doh, me, soh*, sung to "*lah*."

The class then sang an easy piece of music in two parts from the blackboard, but this was not a sight test, and the teacher played the violin with the upper part.

At my request, the boys were permitted to try the following :—



They sang this together, but without paying attention to time. The method by numbers was used, and the intervals were correct first time. The boys sang—

eins, drei, vier, drei, fünf, acht.

1 3 4 3 5 8

Before they attempted the test with correct time, the length of the notes was dealt with in the usual question and answer method, but the effort to sing in correct time and tune was not successful. This somewhat surprised me for I should have thought

that though the intervals are very difficult on a staff method, yet the duration of the notes should present little more difficulty than in the case of the Tonic Sol-Fa method.

The attention and discipline were excellent, as was almost invariably the case with German teachers taking singing; and two hours are given per week to the subject, so that I can only suppose the small progress in sight-singing to be due to the method.

Frankfort. — Primary School. Class III. Girls.
Fifth School Year. Official age, ten and eleven years.

An exercise in singing at sight was taken at my request by the teacher.



This staff and notes were placed on the blackboard.
The children sang—

c, d, e, f, g, &c.

Then in twos and threes, thus—

c, d, e.

Then omitting *d*—

c — e.

Then

c, d, e, f.

Now, said the teacher, think of *f*, and sing

c — f.

Any teacher knows how extremely elementary this is for children of that age. This is, in my judgment, almost wholly attributable to the system, but not entirely, for even with the old notation one could adopt a correct pedagogical method of learning intervals. It is difficult enough for young children to learn to distinguish, say, "doh" and "soh," and much more so to distinguish "doh" and "ray." This method of teaching the "natural diatonic scale" is on a parallel with teaching orange and violet, for example, before red, blue, and yellow are known in the colour scale.

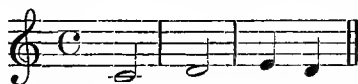
The following time test was set by me :—



It was not successfully done, and yet these children sang their part songs extremely well, and more than compared favourably with girls of a similar age in England.

Frankfort. Class II. Children about
twelve years of age.

The teacher at my request was kind enough to set the following sight test in time and tune :—



This was not successfully done, and a second was given in which time was to be disregarded :—



This was attempted on the method by numbers. The children were expected to sing *eins, fünf, drei, zwei, eins*—1, 5, 3, 2, 1. It was not done very readily. It seems possible to work out, in this way, something like our “movable doh” system; but, though practised sometimes by teachers, the method was not in favour with the authorities on school method, and many teachers disliked it.

Berlin.—Primary School. Classes I. and II. About sixty pupils present, official age, twelve to fourteen.

The boys sang in three parts with a soft pure tone some of the sweetest songs I have heard. Our very best work in this respect would not do more than rank with this. I tested for flattening after each song, and found none.

The rector was kind enough to allow me to set a sight test.

I set the following, putting on the additional bar because of the excellent part singing :—



The teacher was confident that the boys could sing this in correct time and tune; on trial, however, they certainly did not succeed.

If this is put in the Tonic Sol-Fa notation, thus,

KEY C.
 { | ḍ :— | m :f | m :— | s :ḍ | ḍ :— | s :m ||

it will perhaps more readily be seen that it is a test which we should regard as suitable for the lower standards, rather than for the top classes of a school.

Berlin.—Primary School. Classes I. and II. Eighty boys present. Official ages, twelve, thirteen, fourteen.

This class was taken in the hall, which, it will be remembered, is not, in German schools, situated so that sounds penetrate thence into the school class-rooms.

The teacher was kind enough to let me hear some very carefully prepared four-part singing, and "Lift thine eyes" was sung in its setting for three voices. The "piano" passages were exceedingly well rendered, but there was some forcing in the loud parts which led to flattening.

By the kind permission of the director I was able to give the test in time and tune which I had set so frequently before—



A boy was selected to sing this at sight, but was not successful. A second boy who attempted it was likewise unsuccessful. Then the class sang altogether, but sang a tone and not a semitone from E to F, nor was any attempt made to render the time value of the

notes. It is just this uncertainty as to the intervals represented which constitutes one great difficulty of the staff method of singing by sight, even, be it noted, in the open key. The general excellence of the singing convinces me that the great inferiority of the majority of the German classes compared with our own is entirely a matter of method. With the Tonic Sol-Fa method the German school children would probably be superior to ours in sight-singing.

Leipsic. Classes I.*a.* and I.*b.* Girls, thirteen and fourteen years of age.

Three part songs were splendidly rendered, then at my request the teacher gave the following sight test :—



This class sang the test correctly at once.

The teacher then gave the following, which was also sung correctly :—



Leipsic. Class I. Thirty-two boys present, thirteen and fourteen years of age.

The following test, quite a new one, the teacher said, was written on the blackboard :—



The lesson opened with the usual questions and answers as to the names and lengths of notes. Then a boy was chosen to sing the exercise to "lah."

He sang "lah," and then ascended a semitone only. The teacher stopped him with an emphatic "No," and he sang correctly on his second attempt. Then all the boys sang the test together.

The next exercise was as follows :—



Several boys sang this correctly the first time. The class then sang a kind of modulator practice.

The teacher called out an interval, as *eins* (doh), *zwei* (ray); or *eins* (doh), *vier* (fah); &c., and the class sang them correctly. I heard two part songs.

*Der Mai ist gekommen, and
Mein Vaterland Germania.*

The conducting was excellent, and the singing very good.

Hamburg.—Primary School. Classes

I.a., I.b., II.a., II.b.

The school choir sang to me in the drill-hall. The music was in three parts, the attention to the conducting was excellent, the soft singing exquisite, and the loud passages very good.

I was unable to obtain an exercise in sight-singing.

The Teaching of Singing

I do not think it is generally understood in England that the German schools are relatively unsuccessful in teaching singing by note. The conclusion was forced upon me by repeated examples, and any one who reads the account of the preceding lessons must of necessity accept it. The difference I have suggested to be due to the superiority for singing purposes of the Tonic Sol-Fa method, which the Germans do not adopt. For in the rendering of their school music German children are equal to our best, and the average is certainly higher. Moreover, musical taste is more widely spread than with us, and the teachers have been required to reach a standard of musical proficiency rare among teachers here. Also, the children give two hours per week to singing to our one. Yet, notwithstanding this, the singing by note of even the best classes is limited to what is very elementary.

It is some gratification to one who believes in the importance of good method to find a clear and unambiguous case where success is wholly due to the method employed, and not to the exceptional gift or industry of the persons employing it.

